
**Master Thesis**

# Mergers and Acquisitions:
## The Case of Microsoft Corporation and Activision Blizzard Inc.

Author:
Robert Stenmark

Hand-in date:
4th of June 2012

Supervisor:
Peter Tsvetkov

Programme:
Master of Science in Business Administration
Major in Corporate Finance and Control

*This thesis is a part of the MSc programme at Universidade Católica Portuguesa.*
*The school takes no responsibility for the methods used, results found and conclusions drawn.*

***"Never count on making a good sale. Have the purchase price be so attractive that even a mediocre sale gives good results."***

*- Warren Buffett*

© Robert Stenmark

# Acknowledgements

Writing this dissertation has been an enlightened and interesting experience. Although it required hard work and determination, the experience has provided me with better analytical skills and valuable insights in an area of finance I find particularly interesting. Moreover, this dissertation could not have been completed without the support and advice from the people whom I am indebted.

I would like to express my sincere gratitude to my supervisor Peter Tsvetkov for his constant availability and for providing me with constructive feedback, invaluable insights and clear guidance. I could not have wished for a better supervisor.

I also want to give a special thank to my close friends Torbjørn Skjelde, Martin Strandenæs and Mette Skattebo for their comments, encouragement and patience. I am forever grateful for their support and for believing in me.

Last but not least, I want to express my gratitude to my beloved family for their constant support and for having confidence in my abilities throughout my studies.

Lisbon, June 2012

Robert Stenmark

© Robert Stenmark

# Abstract

Globalization, geographic diversification and deregulation of markets have led to an increasingly competitive environment for most companies. Increasing competition often leads to higher efforts to persuade consumers to by the given company's product, and consequently margins are affected. Moreover, this development of the business environment also faces as a threat to most companies' organic growth. For this reason, companies often envision mergers and acquisitions as a solution to this problem. The decision of taking on a larger transaction to acquire another company is often motivated by the fact that it may create additional opportunities for the company, enable higher growth, and ultimately create shareholder value.

Mergers and acquisitions are especially apparent in industries that are highly affected technological innovations. The rationale for this is grounded in the potential target company's technological assets or specific capabilities, which may pose as highly valuable for the acquirer. The acquisition of the target company enables the transfer of these skills and may create a competitive advantage, which in turn creates a driver for long-term sustainable growth.

This paper will analyze the possibility of creating additional value through mergers and acquisition. The paper will start of by surveying literature on various theories on valuation of companies. This part will also present evidence on what valuation techniques that proves to yield reliable results, and discuss value creation in the light of mergers and acquisitions. In the second part the paper the presented theory will be put into practice by through a proposed M&A-situation between Microsoft Corporation and Activision Blizzard, Inc. This part will present a thorough company- and industry analysis that will provide the basis for a valuation of the companies, both on a standalone basis and on a consolidated basis. The final part of the paper will present the acquisition process itself, and discuss issues that are related to the acquisition. This part will also present the optimal way for Microsoft to proceed in acquiring Activision Blizzard.

When valuing the companies individually, both companies show indications of being undervalued compared to their average market values for the last year. Microsoft value is displaying signs of being overly undervalued, while Activision Blizzard only is slightly undervalued. A valuation of the combined company reveals that there were considerable opportunities for additional value creation through a merger.

Finally, based on the analysis and the valuations in the paper suggests that that Microsoft should proceed with the acquisition. The acquisition will be presented to Activision Blizzard's shareholders as a friendly tender offer, in order to persuade them to sell their shares in the company. The price offered for the outstanding shares of the company is suggested to provide current shareholders with a premium of 29.4% to the average market capitalization of the company. Moreover, the acquisition will be financed with a cash-only transaction, as to maintain financial flexibility and in line with Microsoft's acquisition history.

© Robert Stenmark

# Table of Contents



© Robert Stenmark

# List of Appendices



© Robert Stenmark

# List of Tables



© Robert Stenmark

# List of Figures



© Robert Stenmark

# List of Abbreviations

| | |
|---|---|
| $\pi_a$ | Probability of Bankruptcy |
| $\Pi$ | Pretax Profit Margin |
| %P | Acquisition Premium in Percent |
| APM | Arbitrage Pricing Model |
| APV | Adjusted Present Value |
| ATVI | Activision Blizzard, Inc. Ticker Symbol |
| $\beta_L$ | Levered Beta |
| $\beta_U$ | Unlevered Beta |
| BC | Bankruptcy Costs |
| BRIC | Brazil, Russia, India and China |
| CAGR | Compound Annual Growth Rate |
| CapEx | Capital Expenditures |
| CAPM | Capital Asset Pricing Model |
| $D_t$ | Amount of Debt at Time t |
| E | Amount of Equity |
| $E_T$ | After-Tax Earnings |
| $E(r_E)$ | Expected Return on Equity |
| $E(r_m)$ | Expected Return on the Market Portfolio |
| EBIT | Earnings Before Interest and Taxes |
| EPS | Earnings Per Share |
| EDD | Entertainment and Devices Division (Microsoft) |
| FCFE | Free Cash Flow to Equity |
| FCFF | Free Cash Flow to the Firm |
| g | Growth Rate |
| GAAP | Generally Accepted Accounting Standards |
| HR | Human Resources |
| IFRS | International Financial Reporting Standards |
| IXIC | NASDAQ Composite Index Ticker Symbol |
| LDT | Life to Date (Total Number of Products Sold in Lifetime of Product) |
| M&A | Mergers & Acquisitions |
| MMORPG | Massively Multiplayer Online Role-Playing Game |
| MSFT | Microsoft Corporation Ticker Symbol |
| MTP | Meet the Premium |
| $MV_T$ | Market Value of Equity |
| NC | Net Cash |
| OS | Operating System |
| p.a. | Per Annum |
| PV($x$) | Present Value of $x$ |
| $r_D$ | Cost of Debt |
| $r_E$ | Cost of Levered Equity |
| $r_f$ | Risk Free Rate of Return |
| $r_U$ | Cost of Unlevered Equity |
| $r_{WACC}$ | Weighted Average Cost of Capital |
| R | Revenue |
| R&D | Research and Development |
| ROIC | Return On Invested Capital |
| SEC | U.S. Securities and Exchange Commission |

© Robert Stenmark

| | |
|---|---|
| SynC | Cost Synergies |
| SynR | Revenue Synergies |
| T | Effective Tax Rate |
| $T_C$ | Corporate Tax Rate |
| WACC | Weighted Average Cost of Capital |
| WC | Working Capital |
| WCN | Working Capital Need |
| yoy | Year Over Year |

© Robert Stenmark

# 1. Introduction

This paper will present the case of a proposed M&A situation between the companies Microsoft Corporation (Microsoft) and Activision Blizzard, Inc. (Activision Blizzard). Microsoft is one of the worlds most widely known software companies, while Activision Blizzard is an entertainment software company that publishes video games. The objective of the case study is to present the value creation opportunities that can be created in a M&A situation, and reflect on how to proceed in such a situation. Moreover, it will be analyzed how to value these opportunities and how to increase the likelihood of realizing the value creation.

The literature review will survey literature on various theories on the valuation of companies. It will present the most important theoretical frameworks that are applied practitioners and academics, discuss their reasonableness and their ability reliably capture the value of a given company. These theories will build the framework for assessing the value of the two companies in the proposed merger. Moreover, this section will also shed some light on important considerations in M&A.

The company and industry analysis will present the historical performance for both companies and their respective industries. This information will be necessary to build a reliable valuation model that reflects the current and expected performance of the companies in relation to their respective industry. Without having this information at hand, a valuation may provide dubious results and may misrepresent the value that can be realized through a potential merger.

The following sections will forecast important value drivers that enable the estimation of the standalone values for the companies. When these values have been firmly established, the values of the combined company will be analyzed in order to find potential value enhancements in the merger.

Finally, after valuing the companies on a standalone- and merged basis, the acquisition itself will be considered. This section will provide valuable insights on necessary considerations in an acquisition, and present a proposal for how Microsoft should proceed with its intended acquisition in order to ensure that value is created.

© Robert Stenmark

# 2. Literature Review

In recent years, the number of mergers and acquisitions (M&A) has soared (Barkema and Schijven, 2008), and it has become an increasingly popular way of attempting to gain ground as a company and creating value for its shareholders. The strategic motives behind M&As differ from transaction to transaction. However, most mergers appear to be justified with the notion that they enhance value of the combined company. This value is often unattainable for the companies operating separately, and is realized *only* through the combination of the two entities. Damodaran (2005b) refers to this added value as the synergy obtained by the combined company, and is the result of new opportunities created directly through the merger. Whether or not companies are able to consistently capture this added value, and hence create value for its shareholders, remains more or less inconclusive.

Ultimately it will be the price paid for the target, and whether the envisioned improvements are realized, that will determine if the investment yields value for the acquirer's shareholders. This introduces valuation as an essential part of M&A, and it provides managers with a useful tool to manage value, while it provides investors with a tool for considering potential investments. Hence, a reliable estimate of the corporate valuations can improve the likelihood of realizing the potential added value.

The forthcoming section of this paper will provide a discussion on common approaches in the valuation of companies, followed by a review of findings specifically related to M&As.

## 2.1 Measuring Value

To present date it can be identified a wide range of different approaches to valuation. The rationale for the application each approach is usually different (Koller et al., 2010), and the degree in which it is applied differs by academics and professionals. In academic literature there has been an extensive focus on discounted cash flow models (e.g. Koller, et al., 2010), while practitioners more frequently apply relative valuation frameworks (Lie & Lie, 2002).

Most valuation models base their estimation on some form of present value approach to current and future income streams to the company or its investors (Young et al., 1999), and has its roots in the model presented by Modigliani and Miller (1958). It has become common to distinguish between two broad types of valuation methods, namely equity valuation models and pure enterprise models. The former estimates the value attributable purely to equity shareholders, while the latter estimates the value for the entire business that ascribes to all claimholders of the enterprise. Further, Young et al. (1999) distinguishes between models that focuses on cash flows, returns or multiples. The cash flow models center its attention to the stream of future cash flows that becomes available to investors or other claimholders, while models based on returns link the valuation to the excess return on existing and future investments. The multiples approach implies creating a multiple using one or more fundamental value drives and comparing this to the value of a group of similar companies. This approach implicitly assumes that the market is able, on average, to provide us with the real value (Damodaran, 2005a). Other authors have emphasized that value can estimated using a real options approach (e.g. Copeland & Antikarov, 2003; Trigeorgis, 1996).

Young et al. (1999) argues that most models are based on the same understanding of value creation, and that they will yield the same result as long as the assumptions are applied consistently across models. Damodaran (2005a) shares this

stance, and adds that the determinants of multiples are the same as for discounted cash flow models. This means that relative valuation should produce approximately the same result as for other valuation approaches. Further, it is recommended to rather use scenario-based cash flows with probabilities than to apply the real options approach (Kester & Froot, 1997). The reason for this is that the real options approach is argued to easily overrate the value of follow-on opportunities and hence produce a biased valuation (Kester & Froot, 1997).

The theory presented above suggests that it will be undesirable to evaluate all of the existing models to provide a sound presentation of valuation. The discounted cash flow valuation approach is argued to be the most precise and most flexible model (Koller et al., 2010) and the model with the best credentials (Damodaran, 2005a). For this reason, this model will be the basis for the following discussion on valuation. As a supplement, the model will also be considered in the light of relative valuation.

### 2.1.1 The Components of Discounted Cash Flow Models

There are multiple versions of discounted cash flow models. In the following section, the focus will be on the components of the Free Cash Flow to Firm model, as this remains the most preferred DCF model by practitioners and academics (Koller et al., 2010). It captures the value attributable to *all* of the capital providers of the firm. The model will be presented in the next section, with the addition of the Adjusted Present Value (APV) approach that also relies on discount rates.

The discounted cash flow models utilizes the expected cash flows that will yield from the assets in place and the growth assets in the company, and discounts them back to reach a present value for the firm (Damodaran, 2005a). In order to find a value for the future cash flows it is necessary to make qualified assumptions about current cash flows, expected growth and expected return on invested capital (ROIC) (Koller et al., 2010). In addition, the value subsequently attained will rely heavily on the assumptions for the discount rate. These issues will be discussed in more detail below.

#### *Future Cash Flows*

The future cash flows are an essential part of any DCF valuation model. In order to estimate the value of the company, it is essential to calculate the free cash flow to the firm, i.e. the value that in reality could be distributed to providers of capital. Although there exist various definitions for this measure, the most common type is described by Damodaran (2005a) as "cash flow after taxes and reinvestment needs but before any debt repayments" (p. 719).

$$Free\ Cash\ Flow\ to\ Firm = EBITA(1 - T_C) - (CapEx - Depreciation) - \Delta WC$$

In order to find the expected FCFF, the underlying cash flows (earnings, costs, etc.) have to be forecasted into the future. An important driver in these cash flows is the expected growth rate ($g$) for the company. The growth in earnings can be traced back to investments in new assets and improvements in efficiency on existing assets (Damodaran, 2008a).

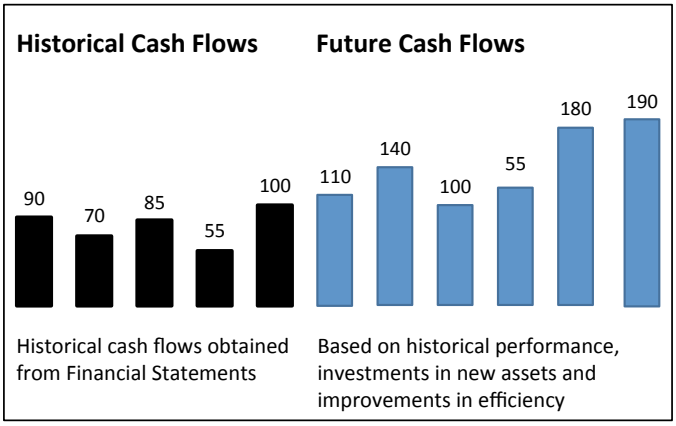



*Figure 1: Future Cash Flows*

Large growth rates tend to be more frequently observed in small successful companies, as efficiency improvements and investment opportunities are plentiful. However, as these companies grow larger the efficiency improvements will diminish, and as their success attracts competition the investment opportunities become scarce. As of this reason it is hard to sustain high growth over longer periods of time. Damodaran (2008a) states that companies seldom grow at rates higher than the economy for extended periods. In the same line of thought, the median earnings-growth across companies is found to be close to the growth in gross domestic product (Chan, Karceski, & Lakonishok, 2003). Damodaran (2008a) defines long-term sustainable growth in operating income as:

$$g = Reinvestment\ Rate \cdot Return\ on\ Invested\ Capital\,(ROIC)$$

where (Damodaran, 2007)

$$Reinvestment\ Rate = \frac{CapEx - Depreciation + \Delta WC}{EBIT(1 - T_C)}$$

$$Return\ on\ Invested\ Capital = \frac{EBIT(1 - T_C)}{Fixed\ Assets + Current\ Assets - Current\ Liabilities - Cash}$$

There are two things one should take note of in the rearmost formula, for ROIC. First, the invested capital, the denominator of the formula, should always be stated in book value terms to avoid the downward bias and the markup that market values adds to existing assets. Second, the reason why cash is subtracted is to keep the model consistent, i.e. earnings income is our measure of growth, and interest income from cash is not included in the operating income (Damodaran, 2007).

In the long-term, it is also important to remember that the level of depreciation ultimately is based on the size of the capital expenditures. Broadly speaking, this means that in long run it is impossible to have depreciation that is greater than the capital expenditures. Hence, when the company reaches its long-term sustainable growth rate it is common to assume that the depreciation matches the capital expenditures (Coffey, 2009), i.e. the assets are replaced continuously as they wear off. In the following section it will be uncovered how the future cash flows comes into play in the different DCF-models.

### *The Cost of Capital*

The rate that should be applied when discounting future cash flows should optimally reflect the investors' opportunity cost of taking on that particular investment. In other words, the discount rate should reflect the time-value of money (the risk free rate) and a risk premium to compensate the investor for the additional risk (Luehrman, 1997b). One should note that the discount rate applied in each case will depend on the valuation approach. The discount rate utilized in a FCFF valuation is a weighted-average cost of capital (WACC), which is a risk-adjusted rate that reflects the overall risk of the capital provided in the firm. The APV approach is slightly different and hence the discount rates required are the cost of debt and the *unlevered* cost of equity in order for the model to serve its purpose.

The weighted-average cost of capital is an approach that balances the discount rate in to reflect the risk of the company's financing sources. In a given company there can be several costs of debt depending on the mixture of liabilities used for financing. Apart from regular bank debt, a company can make use of alternative investment sources through bond offerings, securitization and the hybrid market (Shivdasani & Zak, 2007). The cost of debt is commonly determined as a function of the current level of risk free interest rate and a default spread (Damodaran, 2010).

$$Cost\ of\ Debt\ (r_D) = (Risk\text{–}Free\ Rate + Default\ Spread)$$

As the risk free rate affects both the cost of equity and the cost of debt, it is important find a reliable estimate for it. An asset is considered risk free if its actual return equals the expected return, i.e. there is no uncertainty or variance associated with its return (Damodaran, 2008b). Further, for this to be true neither default risk nor reinvestment risk can be present. As the risk free rate tends to vary with time, one should optimally use year-specific rates. However, using rates with longer maturities tend to make little difference if the duration of the risk free rate matches the duration of the cash flows (Damodaran, 2008b). Damodaran (2008b) argues that the risk free rate should be consistent with the currency of the cash flows, and that using a rate with 10-year duration (e.g. Treasury bond) is a good practice for valuation.

The default spread in the model reflects the default risk of the company. As the probability of default increases, the lenders require a higher compensation for the additional risk. This measure can be challenging to estimate reliably for a company. If the debt is widely traded the implied default spread can easily be extracted using the bond price and the risk free rate. However, if the debt is not traded on a regular basis it is more common to estimate the cost of debt by examining similar rated bonds traded in the market. For non-traded debt it is normal to use the historical borrowing history as a proxy (Damodaran, 2010).

The equity investors of the firm, however, require a return rate for their residual claim on the firm – known as the cost of equity. Because these investors only hold the residual claim, increasing debt will affect their overall risk and it consequently needs an alternative assessment. The most frequently used model to estimate the cost of equity is the Capital Asset Pricing Model (CAPM) derived by William Sharpe (1964), John Lintner (1965). The model forms a linear relationship between the cost of equity and the company's risk profile (β) in relation to the market.

$$E(r_E) = r_f + \beta_L(E(r_m) - r_f)$$

The model is based on the assumption that diversification enables the investor to escape all risks except for the overall market risk. Since all other risks are diversifiable it is argued that only the company's rate of return to the level of economic activity is relevant in when considering risk (Sharpe, 1964). When the company is purely equity financed, or when using the APV, the model will be expressed as:

$$E(r_U) = r_f + \beta_U(E(r_m) - r_f)$$

In order to provide a reasonable understanding of the CAPM model, a proper assessment of its components is necessary. The components will be discussed as they appear in the model, except for the risk free rate just discussed.

The beta is a relative measure of systematic risk, i.e. a stock's risk added to a diversified portfolio (Koller, Goedhart, & Wessels, 2010). This means that if an investor adds a stock that increases the overall risk of the portfolio, this investor will require a higher return. Damodaran (2010) encourages the use of regression modeling to estimate the beta. This should be done my regressing equity returns on a market portfolio, and the resulting slope coefficient measures the company's beta. Further, he recommends the application of at monthly data, and using a broad index for the market portfolio. However, Kaplan and Peterson (1998) argue that using only one company in the regression induces considerable statistical noise, and hence high standard errors for the beta. They propose using companies with similar characteristics and who operates in the same line of business, to improve the accuracy of beta. The best way to perform this procedure is by estimating the betas for each individual company, unlevering the betas, and using the relevered median as a proxy for the company. The betas are unlevered in order to control for different capital structures within the sample (Kaplan & Peterson, 1998), and relevered to reflect the given company's capital structure. The following formula converts the beta (Damodaran, 2010).

$$\beta_L = \beta_U\left(1 + (1 - T_C)\left(\frac{D}{E}\right)\right)$$

It can be directly observed from the formula that the unlevered beta will always be lower than the levered beta, as one should expect.

The last component of the CAPM model is the equity risk premium ($E(r_m) - r_f$), which measures the excess return an investor would expect to earn while holding the market portfolio (or a well diversified portfolio). There is a wide range of determinants of the size of this premium, some of which are investor risk aversion, market liquidity, and macroeconomic volatility.

Studies on the risk premium have used different approaches to find a reliable estimate, but there seems to be little consensus on what is the best approach (Damodaran, 2011). The most apparent approach is using historical premiums over an extended period of time. However, using this approach for a given mature market it *may* yield historical premiums that are higher than expected premiums due to survivor bias, i.e. failing companies have been removed from the historical databases since they have ceased to exist. Damodaran (2011) argues that looking across multiple markets for very long time periods can mitigate this bias. In their recent report, Credit Suisse (2012) reports a global risk premium of 4.4%, which is close to what Koller et al. (2010) classifies as the appropriate range (4.5-5.5%). Other approaches include

estimating the premium is through surveys, and by using the implied premium. The resulting premiums from surveys tend to vary depending on who the targets are in the survey, and seem to have little prediction of future premiums (Damodaran, 2011). The implied approach has the advantage of being market-based and forward looking, but its results still show signs of being highly dependent on the model chosen for the valuation and the reliability of the inputs (Damodaran, 2011). The research shows that estimating a reliable value for the equity premium is a daunting task, and that assumptions for its value must be made in order to perform important financial analyses or valuations.

Summarizing, the CAPM should consist of a risk free rate with duration of 10-years, a median beta for the industry and an estimate for the equity risk premium. The model has been given extensive attention in literature and is the most common measure for cost of equity (Koller et al., 2010). However, the model has also been heavily criticized for its inability to explain the expected return with solely using the beta on a market risk premium (e.g. Banz, 1981). The frontrunners of these critiques have been Fama and French (1992, 1996, 1997), with the argument that the cost of equity is distressingly imprecise. They argue that there are several other variables (e.g. size, book-value-equity/market-value-equity) that could add increased explanation to the model. However, they also suggest that the CAPM's inability to describe the cost of equity could be due to bad proxies for the market portfolio (Fama & French, 1996). In spite of this, the model remains common among practitioners and academics alike, and it continues to exist as an important model in valuation.

### *The Weighted Average Cost of Capital*

The cost of debt and the cost of equity come together as an essential input in the WACC model, referred to earlier. The WACC is a tax-adjusted discount rate that also captures the value created or destroyed through financing (Luehrman, 1997a). When incorporating cost of debt and the cost of equity the WACC is mathematically defined as follows:

$$r_{WACC} = \frac{E}{E+D} \cdot r_E + \frac{D}{E+D} \cdot r_D \cdot (1 - T_C)$$

Estimating this model may seem as a reasonably easy task considering that the book values of debt and equity is widely available in the financial statements. However, since the WACC forward-looking measure and captures the cost of raising new funds it is more appropriate to apply market value weights (Damodaran, 2010). Koller et al. (2010) takes the discussion one step further by advocating the use of targets rates rather than current rates if the capital structure is expected to change, as the discount rate should reflect the long-term capital structure. The target capital structure should be assessed based on the long-term trend for the company in its particular industry. Furthermore, Damodaran (2009) and Koller et al. (2010) argues that the level of debt should be adjusted to reflect off-balance sheet items such as operating leases and pension liabilities. These items will have significant effects on both the income statement and the balance sheet, and if unadjusted for they might distort the real value of debt. The adjustment needs to be carried out consistently with the definition of the free cash flow.

Nevertheless, the WACC model tends to be suitable only for companies with simple and static capital structures (Luehrman, 1997b), and its calculation often

becomes intricate with the introduction of complex securities (Koller et al., 2010). Harris and Pringle (1985) assert that its application is limited to the evaluation of added risks that are of the equivalent risk as the company's current operating and financial risk. This should suggest the use of the same proportionate capital structure, and underlying risk, in all projects/acquisitions undertaken by the company. For this reason, a number of alternative approaches have been suggested to improve flexibility, one of which is the Adjusted Present Value (Myers, 1974). It differs in its application by breaking up the independent components of risk and discounts them separately in order to reach the enterprise value.

### 2.1.2 The Discounted Cash Flow Models

In this section the Free Cash Flow to the Firm model based on WACC will be presented in detail, in addition to the APV model. These are the two most common approaches to value discounted cash flow models. The latter valuation approach was first presented by Stewart Myers (1974) and it values operations with different risks and the financial maneuvers separately. It is argued to be a helpful tool for managers in display where value is created (Luehrman, 1997a).

#### *The Free Cash Flow to the Firm Model*

The free cash flow to the firm model, also referred to as the enterprise model, has been widely accepted as the standard of discounted cash flow models (Luehrman, 1997a). The model estimates the value attributable all capital suppliers of the company (equity and debt), and is based on the future free cash flows to the firm discounted back using the WACC. Mathematically the calculation can be written as (Damodaran, 2005a):

$$Value\ of\ Operating\ Assets\ of\ the\ Firm = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1+r_{WACC})^t} + \frac{\left(\frac{FCFF_{n+1}}{r_{WACC} - g_n}\right)}{(1+r_{WACC})^n}$$

The FCFF model consists of two main components, which each explains the future income streams that are expected to yield to the company. In principle, the formula could be expressed as a function of all the future cash flows discounted at WACC (with only the first part of the formula). However, the practice of discounting each and every of the future can be a tedious process, and it has hence evolved as a common practice to use a terminal value to determine the remaining value after the growth of the firm has stabilized. The second part of the equation *is* this terminal value, and accounts for the value created after the explicit forecast period. The terminal value tends to capture between 80% and 90% depending on the length of the forecast period (denoted by *n* in the formula) (Young et al., 1999). The length of the forecast depends on the nature of the company, but it is in general a good idea to use 10 to 15 years of data. Using a shorter explicit forecast period tends to result in undervalued companies (Koller et al., 2010).

When the formula has been estimated, one can obtain the value of equity by incorporating the value of non-operating assets and then subtracting the value of all non-equity claims outstanding (Damodaran, 2005a). The valuation using the free cash flow to the firm can be illustrated as follows.

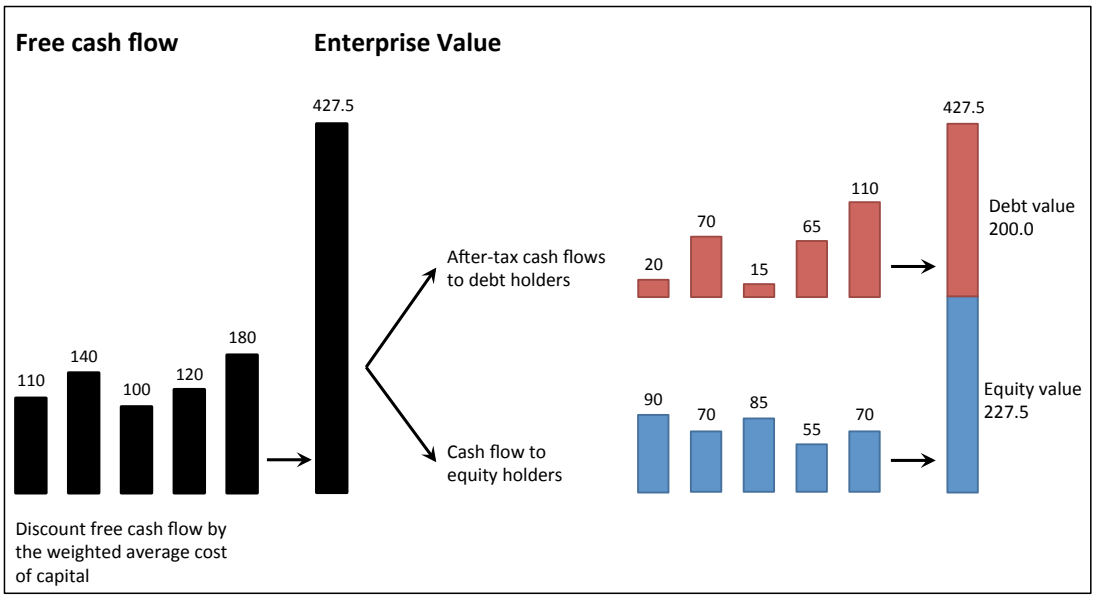



*Figure 2: Enterprise Valuation of a Single-Business Company, (Kaplan et al., 2010, p 103)*

### *Adjusted Present Value Model*

The Adjusted Present Value, also referred to as valuation by parts, has been argued to be a better valuation model when the capital structure is complex and when the financial side effects are important (Koller et al., 2010). The model can be estimated based on four or more steps, depending on how many different sources capital there are and how the analyst wants to separate the enterprise value. First, the firm is valued as a fully equity financed (unlevered) company and discounted using the unlevered cost of equity. Secondly, the benefits of leverage (provided by the tax shields you obtain) are valued using the cost of debt as the discount rate. Thirdly, the cost of leverage, referred to as cost of financial distress, is valued. Finally, the individual components of value are totaled to reach the value of the firm.

$$Value\ of\ Business = Value\ of\ Unlevered\ Firm + Value\ of\ Tax\ Benefits - Value\ of\ Bankruptcy\ Costs$$

The real value of this approach is that it provides a more complete and transparent perspective on where the value resides and it can be used as an effective tool to improve value. The formula above can be broken down and expressed as follows (Damodaran, 2006).

$$Value\ of\ Unlevered\ Firm = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1+r_U)^t} + \frac{\left(\frac{FCFF_{n+1}}{r_U - g_n}\right)}{(1+r_U)^n}$$

$$Present\ Value\ of\ Tax\ Shields\ (PV(TS)) = \sum_{t=1}^{t=n} \frac{T_C \cdot r_D \cdot D_t}{(1+r_D)^t} = T_C D$$

$$Present\ Value\ of\ Bankruptcy\ Costs = \pi_a \cdot PV(BC)$$

The former of the equations is identical to that of the FCFF, apart from the fact that it discounts the cash flows at the *unlevered* cost of equity, thereby obtaining the value of the company without debt. The second equation yields the value of future tax shields when the *amount* of debt is held constant and considering that these tax

shields are as uncertain as the principal and interest payment on debt (discounting with cost of debt). However, it may be unreasonable to use this formula if the firm is growing and expects to increase its debt proportionately with the growth of the firm. This way, the formula is better expressed as (Luehrman, 1997a):

$$Present\ Value\ of\ Tax\ Shields = \sum_{t=1}^{t=n} \frac{T_C \cdot r_D \cdot D_t}{(1+r_D)^t} + \frac{\left(\frac{T_C \cdot r_D \cdot D_t}{r_D - g_n}\right)}{(1+r_D)^n}$$

The expected bankruptcy costs are a function of the probability of default and the costs of bankruptcy. This is often the element in the APV that constitutes an estimation problem since neither the probability or the cost of bankruptcy can be directly observed (Damodaran, 2005a). However, Damodaran (2010) suggest the use of default rates for the given bond rating of the company to find its probability of default. And in assessing the bankruptcy costs he recommends assuming a percentage of firm value, or a scenario-based calculation.

The APV valuation process can be illustrated as in Figure 3 below, where the values of the company are unbundled and rebundled to find its value (Luehrman, 1997a). The valuation approach has both advantages and disadvantages. It provides us with the opportunity to calculate the value of a company with changing capital structure, and to get more insights into where value is created. However, the difficulty of the model lies in the estimation of default and the cost of bankruptcy.

Under the same assumptions, the APV and the cost of capital should provide the same firm value (Damodaran, 2010).

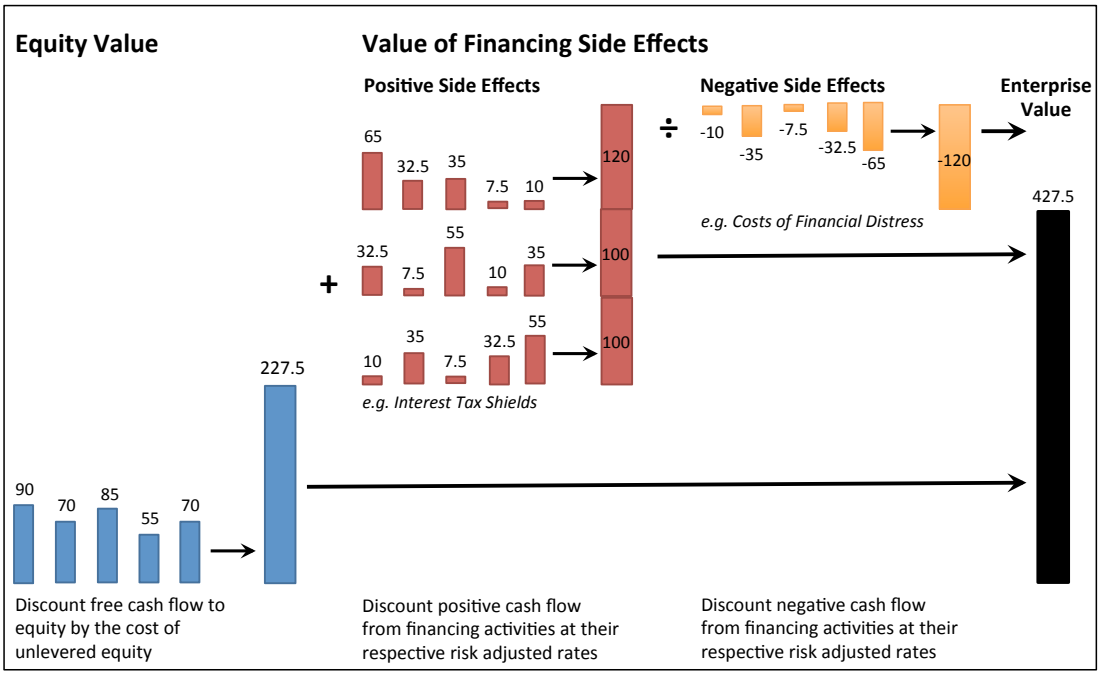



*Figure 3: Adjusted Present Value of a Single-Business Company, based on information from (Luehrman, 1997a)*

### 2.1.3 Relative Valuations

In discounted cash flow valuation, the value of a firm is determined by analyzing variables such as future cash flows and growth, and their underlying levels of risks. However, in relative valuation, the value is determined by examining similar assets that are already are priced in the market (Damodaran, 2010). This approach is based on the explicit assumption that the market "makes mistakes on individual stocks, but are correct on average" (Damodaran, 2005a, p. 769). This can be illustrated by the following graph, where the multiple is the straight black line (the average market expectation) and the blue dots illustrates individual companies' performance.

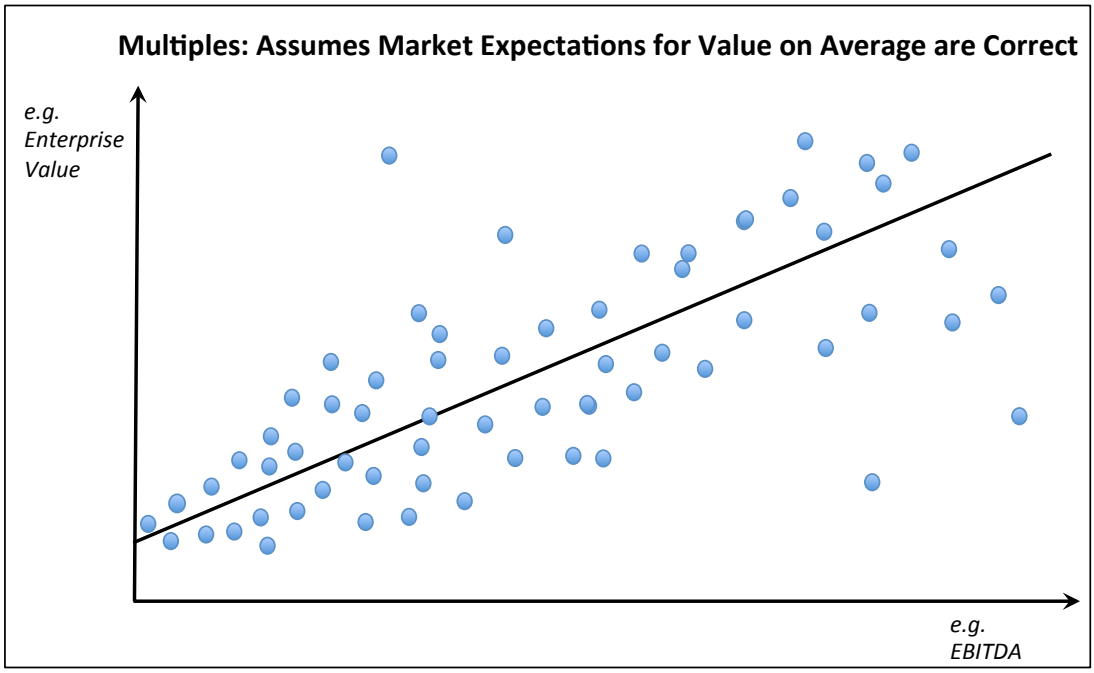



*Figure 4: The Principal Assumption of Relative Valuation*

A note to multiples is that they can yield completely different conclusions about value depending on which set of multiples that are applied to the company (Goedhart, Koller, & Wessel, 2005). For this reason it is important to choose a set of multiples that provides precise and unbiased estimates for value. It is also noteworthy to mention that it is useful to use several multiples in the valuation in order to reach a value that is reliable. Computing several multiples can provide an analyst with a perspective on what drives the value and elements that may provide a more sound valuation.

Multiples can be of financial or non-financial nature, where the non-financial are more suitable for companies with small or negative profits (Goedhart et al., 2005). The financial multiples can be separated into equity-value multiples and total enterprise multiples. In both categories the multiples' distributions are positively skewed, i.e. the mean of the multiples are larger than the medians (Lie & Lie, 2002). This leads us to suggest that the median is a more proper measure for the multiple, compared to the mean.

| Financial Multiples | | Non-Financial Multiples |
|---|---|---|
| **Equity Valuation** | **Total Enterprise Valuation** | **Total Enterprise Valuation** |
| Price/Earnings<br>Price/Forecasted Earnings | Enterprise Value / Sales<br>Enterprise Value / Book Value<br>Enterprise Value / EBITDA<br>Enterprise Value / EBIT | Enterprise Value / Web Site Hits<br>Enterprise Value / Number of Subscribers |

*Table 1: Examples of Financial and Non-Financial Multiples*

Lie and Lie (2002) reports in their analysis of multiples that total enterprise multiples are better estimates of value, and that the multiple *Enterprise Value / Book Value* yields the most accurate estimator. The reason for the lower precision of the equity valuation multiples are that they include nonoperating or extraordinary items, which lead to misleading multiples (Goedhart et al., 2005). Further, an adjustment that has been advocated is the use of multiples based on forecast rather than historical returns (e.g. Liu, Nissim, & Jacob, 2002; Kim & Ritter, 1999). This adjustment yields greater accuracy and lower prediction error.

When the proper multiples are obtained, it is necessary to find set of comparable companies in order to find a multiple that reflects proper market expectations. Damodaran (2005a) states that all multiples are a function of risk, growth and cash flow generating potential, and hence the companies in the peer group should be comparable on these variables. However, Andrew Alford (1992) found in his research of 4,698 companies that choosing the peer group based on industry, in general, led to improved accuracy of the valuation. Similar results where also found by Kaplan and Ruback (1996). Furthermore, it has been found that industries classified using the Global Industry Classification Standard (GICS) system are significantly better at explaining cross-sectional variations in multiples (Bhojraj, Lee, & Oler, 2003). Still, it is important to not overlook the fact that the companies should have roughly the same growth rates, returns on invested capital, and capital structure (Goedhart, Koller, & Wessel, 2005).

The research on relative valuation suggests that it can provide reliable estimates of value. Furthermore, the approach is given considerable amount of attention by analysts in equity research valuations and acquisitions (Damodaran, 2005a). Koller et al. (2010) suggest using the multiples as a supplement to the DCF valuation as a means to give valuation a reality-check and to control if the valuation makes sense.

© Robert Stenmark

## 2.2 M&A Essentials

The globalization, geographic diversification and deregulation of markets have been key drivers of mergers and acquisitions across the word (Zenner et al., 2008). The last decade, acquisition activity levels have been soaring (Barkema & Schijven, 2008). However, the conventional wisdom on mergers and acquisitions is that they tend to fail in delivering value. If this was true and failure was inevitable, would not the observed M&A activity in the long run disappear?

In this section important features of M&A will be discussed. Firstly, the distinct types of acquisitions will be established. Secondly, the opportunities created by acquisition will be discussed in the light of valuation considerations. Thirdly, the reasoning behind M&A and structure of the deal will be discussed. Finally, the issue will be examined when taking the shareholders into considerations.

### 2.2.1 Classifying Acquisitions

Although M&A is referred to as one sort of activity, it can be made a distinction between different types depending on who acquires the company and how the companies intend to operate after the transaction. Damodaran (2002) distinguishes between acquisitions where the acquirer is a company, and where the acquirer are existing managers or outside investors. In this paper, the main focus will be on acquisitions by companies. Damodaran (2002) distinguishes between the transaction types between companies as follows:

- Mergers – target firm becomes a part of acquiring firm
- Consolidations – target firm and acquiring firm becomes a new firm
- Tender offers – target firm continues to exist as long as there are dissident stockholders holding out (successful tender offers ultimately become mergers)
- Acquisition of assets – target firm remains as a shell company, but assets are transferred to the acquiring firm

The acquisition-types with the greatest relevance to this paper are mergers, consolidations and tender offers. These are acquisitions that are virtually the same when considered in the long-term. Tender offers tend to ultimately become mergers, while consolidation is a merger of the companies into a new entity.

### 2.2.2 Creating and Valuing Synergies

M&A frequently creates new opportunities for the combined firm, and the value generated from these opportunities is referred to as synergies. The synergies are not to be confused with value of control, which is the value of operating the company more efficiently under different control (Damodaran, 2005c). The two elements need to be valued separately in order to obtain a reliable estimate for the value.

Damodaran (2005b) categorizes the synergies into *operating synergies* that improves operations of the combined company (e.g. economies of scale), and *financial synergies* that affects the cash flows or the cost of capital (e.g. tax benefits). Moreover, he argues that the best way to attain an unbiased value of synergies is through a three-step procedure. First, the companies involved in the transaction should be valued independently. Second, the combined company should be valued by adding the values found in the first step. Third, the value of the combined company *with* synergies should be calculated. The synergies will be the difference between the values found in step two and step three. The process can be illustrated as follows.

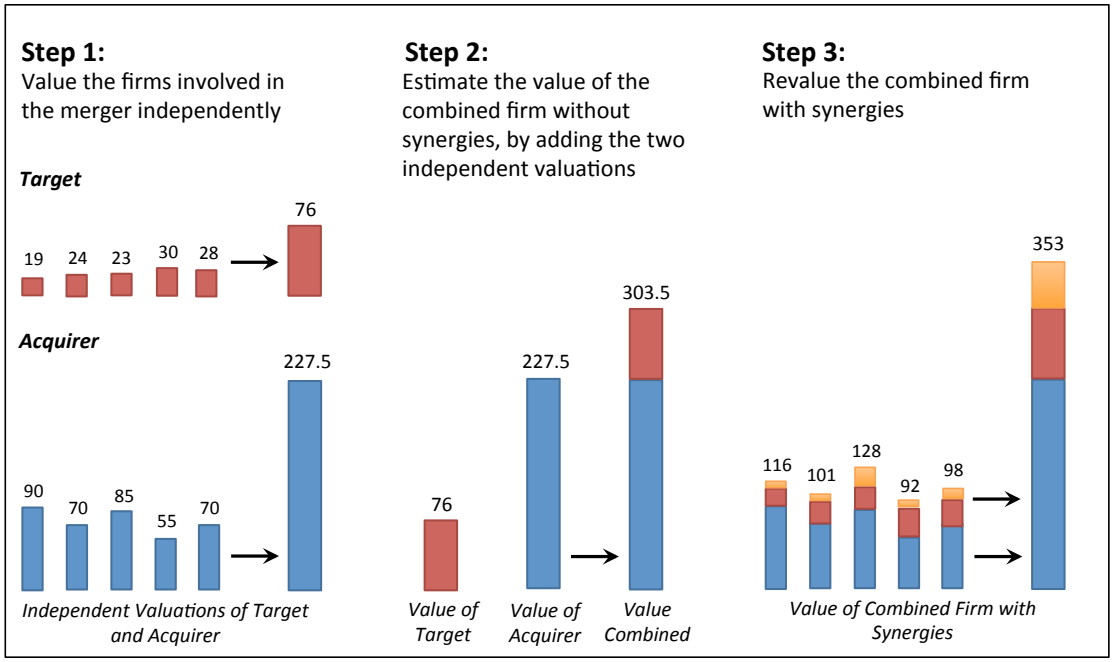



*Figure 5: Steps in Valuing Synergies, based on information from (Damodaran, 2005b)*

Some synergies yield value that is more apparent than others, and some tend to be perceived as value improving for the wrong reasons. For instance, use accretive acquisitions of targets with lower earnings per share (EPS) in order to gain an immediate value improvement. This should clearly not add value to the firm apart from the synergies that are apprehended by investors. However, a study on EPS accretion found that it actually yields value, albeit most apparent for companies with unsophisticated investors (Andrade, 1999). Another dubious synergy is the purchase of prospective high growth companies. High growth companies are often highly priced and they will only yield value if the right price is paid.

As not all synergies are equally pronounced and some can be dubious in nature, it is important to exercise with caution when valuing these. In addition, Damodaran (2005b) argues that if the synergies are substantial they should be fairly allocated based on the benefits the companies add to the combined company.

### 2.2.3 The Focus of the M&A

The potential synergies that are created in M&As are often said to be the underlying motivation behind acquisitions (Damodaran, 2005b). However, these projected synergies often prove to be illusory (e.g. Damodaran, 2010; Buffett, 1997). A frequent question asked in M&A is whether to pursue a diversified or a related acquisition strategy. Morck, Shleifer and Vishny (1990) suggest that managers are motivated to take on diversified acquisitions to make up for poor performance, reduce risk and assure survival of the company. They further report that this type of acquisitions have been performing poorer than related acquisitions. Bruner (2004) argues that the benefits are clearer and easier to exploit in related acquisitions, and they hence provide higher returns. However, the findings on M&A diversification are not unanimous. A study by Morck and Yeung (1997) finds that companies that are information-intensive (e.g. R&D) can benefit from diversification because they possess valuable intangible assets that are problematic to trade. The acquisition of such type of assets can be justified by the potential additional synergies created.

### 2.2.4 The Optimal Structure of the Deal

The optimal structure for the M&A depends largely on the acquisition itself, but research has still managed to find some useful guidelines on method of payment. The alternatives that are present for the acquiring companies are cash-based deals, stock-based deals, or a combination of the two. Acquirers tend to use cash rather than stocks to finance their transactions whenever possible (Zenner et al., 2008). Cash-based deals are frequently associated with better returns than stock-only deals (Bruner, 2004). For instance, Heron and Lie (2002) studied the relationship between payment type and the operating performance of M&As. They reported no significant differences in operating performance based on payment type, however, returns on cash-based deals were higher compared to stock-based deals. Bruner (2004) reports that cash deals tend to have neutral or positive returns, while the straight stock deals tended towards negative returns. It has been suggested that the reason for this negative return is the market's perception of the acquiring company's stock. Since managers possess private information about the company's financial position, they tend to finance deals with cash when its stock is undervalued, and with a stock-based structure when its stock is overvalued (Loughran & Vijh, 1997). Hence, the market perceives stock deals as an indication of overvaluation, and accordingly adjusts for this.

A supplement to cash-based and stock-based payments is the use of earnouts. An earnout provides the deal with a variable payment that is contingent on future performance. Several studies have reported that the use of earnouts has induced higher returns for both payment methods (Bruner, 2004). The acquirer can utilize it as risk management tool for the targets future performance, and improve chances of a successful merger. However, this is a tool that is more appropriate when the target company's managers have large ownership stakes.

### 2.2.5 What About the Shareholders?

When considering synergies and the structure of the deal it is of high importance to also have the acquisition price in mind. The value created for acquiring shareholders will directly depend on the price paid for the target. If the premium paid for the target is larger than the potential synergies that can be obtained, the transaction will yield a value loss for shareholders (Damodaran, 2005b).

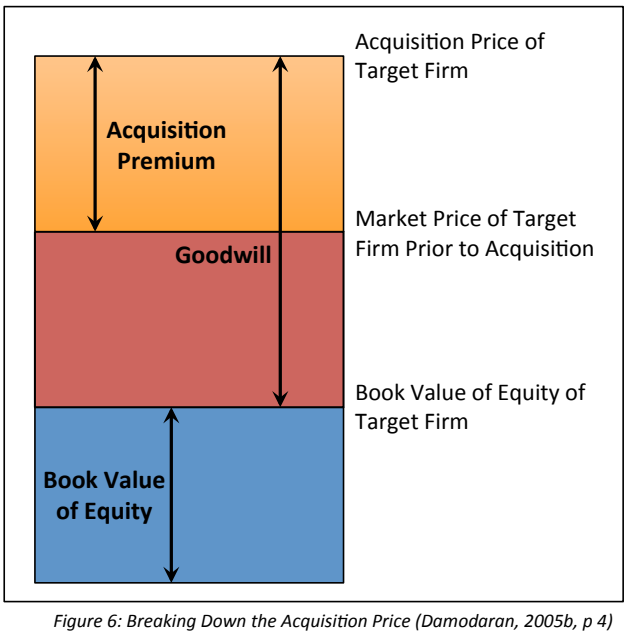



*Figure 6: Breaking Down the Acquisition Price (Damodaran, 2005b, p 4)*

Koller et al. (2010) defines the value created for the acquirer with the following formula.

$$\begin{aligned} Value\ Created\ for\ Acquirer = (&Standalone\ Value\ of\ Target + \\ &+ Value\ of\ Performance\ Improvements) \\ &- (Market\ Value\ of\ Target \\ &+ Acquisition\ Premium) \end{aligned}$$

There has been a fair amount of research on the value gain in acquisitions, both for acquirers and for targets. A study performed by Jarrell and Poulsen (1989) revealed that in the short-term, acquirers has a hard time creating value, and that the excess return usually was negative. A similar fashion, Agrawal, Jaffe, & Mandelker (1992) researched the long-term performance of acquirers in M&A transactions. They report that acquiring companies suffer significant losses over the five-year period following the transaction. In more recent and uplifting survey by Robert Bruner (2004), he reports that close to half of his sample experienced value creation, while the remaining companies either had value preservation or value destruction.

The findings for value creation for target companies are more evident. Early studies on the topic suggest that targets in general are able to obtain positive abnormal returns (Asquith & Kim, 1982). The same results are obtained in Bruner's more recent survey, and he states that "the M&A transaction delivers a premium return to target firm shareholders" (Bruner, 2004, p. 66).

Some research has also considered the merged company as a whole. One such study was performed by Bradley, Desai and Kim (1988), they found an increase in the combined value with an average of 7.4%. Furthermore, they found the value creation to be in line with the literature presented above, i.e. the targets contributed with most of the value creation while the acquirers had negative or neutral creation of value.

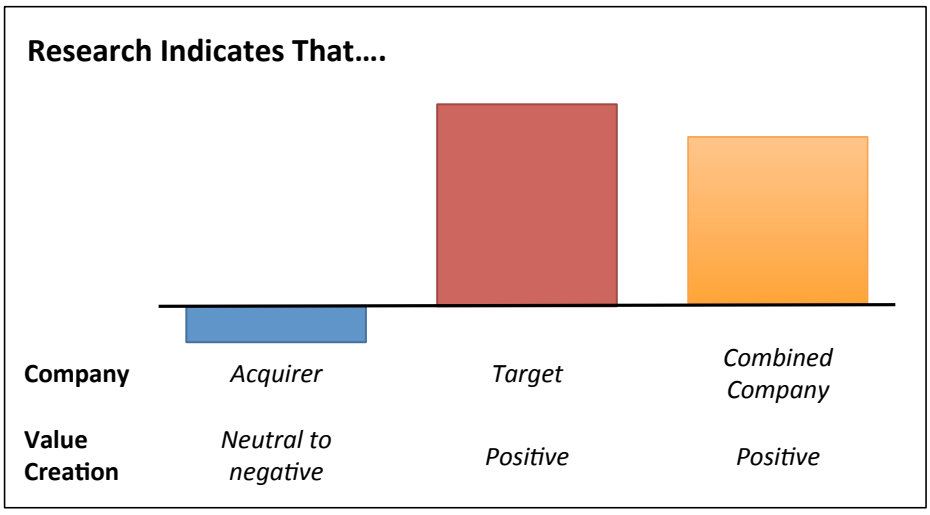



*Figure 7: Value Creation in Acquisitions*

In the same vein, the premium paid for the target can affect the acquirer's performance. Sirower and Sahni (2006) present a useful framework for boards when considering the premium to be paid for the target in relation to potential synergies. Their model, *Meet the Premium* (MTP) line, defines the premium paid for the target in relation to cost and revenue synergies (operating synergies). The model offers a

sanity check for assessing a sensible price range in the transaction, given various combinations of synergies (Sirower & Sahni, 2006). In order for a premium to be justified it has to be located above the MTP line, and at the same time within the "plausibility box", which specifies upper ranges for synergies that can be obtained.

Using this framework, managers will be able to consider the premium in relation to potential synergies, which may provide a better estimate for the premium and the potential value losses may be avoided.

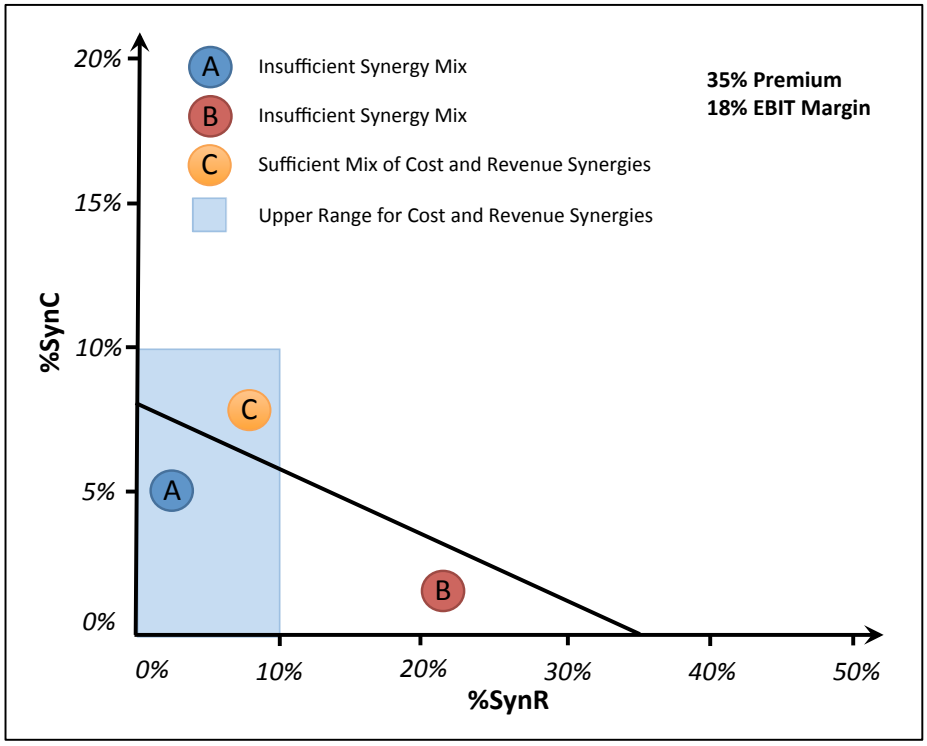



*Figure 8: The Meet the Premium (MTP) Line (Sirower & Sahni, 2006, p. 90)*

### 2.2.6 Concluding Thoughts

Media frequently presents M&As as a worrisome case that never succeeds, but is this right? It is true that the findings within M&A are found to fail and that research somewhat inconsistent in providing clear conclusions on M&A effectiveness. Nevertheless, presenting all M&As as a failure waiting to happen is clearly a misstatement.

Research shows that most M&A manage to add value to the economy as a whole. And the existing literature on the topic has inarguably added some valuable insights for practitioners, academics and current managers. However, it is argued that the problem with current research is that it is of semi-strong form and not strong form (Bruner, 2004), meaning that *if* the conducted studies were of strong form one could, with certainty, draw conclusions on what would have happened if the merger had *not* been executed. In addition, future research could benefit from a more consistent and organized classification of types of acquisitions that actually adds value for both target and acquirer. Furthermore, a thorough improvement of Damodaran's (2005b) framework for fair sharing of the benefits of synergies could also prove to be a valuable tool in making acquisitions more successful.

More consistent research and additional useful tools for managers could lead to value enhancement to shareholders of *both* companies as well as *additional* value creation for the economy as a whole.

© Robert Stenmark

# 3. Company and Industrial Analysis

In order to perform an accurate and reliable valuation of a company it is important to have extensive insight into the companies in question, and into their respective industries (Koller, Goedhart, & Wessels, 2010). Having a perspective on this can reveal valuable information on value drivers in the company and its industry, possible competitive advantages, and noticeable trends that may evolving that alter the valuation.

In this part of the paper, an outline of Microsoft Corporation (Microsoft) and Activision Blizzard, Inc. (Activision Blizzard) will be presented. Subsequently, the industries where the companies perform their day-to-day operations will be discussed. The latter part will also be discussing current trends in the industry as well as future developments in terms of products.

## 3.1 The Companies

For the purpose of this paper, the companies will be discussed with an acquisition perspective in order to understand the companies' main operational business and what makes them distinct from other firms. For a more sound understanding of each of the companies, their divisions and their competitive position, Appendix 1 provides a company overview and a SWOT-analysis for each respective company.

### 3.1.1 Microsoft Corporation (MSFT)

Today, Microsoft is ranked among the 500 largest companies in the world in terms of revenue, ranking above all competing computer software providers (Fortune, 2011). The company provides a wide selection of technological products for professional clients as well as consumers. The products include Microsoft Office suit, online search engine Bing, Xbox 360 gaming console, various video games and operating systems for computers, servers and mobile phones (Microsoft Corporation, 2011a),

The company has a healthy capital structure composed of 83% equity and 17% long-term debt. It has a positive working capital and generates a financing source through the short-term operating cycle (through short-term liabilities) (Microsoft Corporation, 2011a). This capital structure enables Microsoft to create positive net cash that can be used for investment purposes or such (see Appendix 2 for more details).

In 2011, Microsoft reported annual revenues totaling almost US$70 billion, and a net income exceeding US$23 billion, obtained from five different business segments. On the next page is an illustration of the revenue development in Microsoft's specific segments for the last three years. As can be seen in the figures, Microsoft has an own specific division for each market.

The figure shows that Microsoft has experienced an average positive revenue growth of 9.4% year over year (yoy) from 2009 to 2011. A considerable part of the revenue accrues from three of the divisions, which in total accounts for 82% of all revenues. All of these divisions have growth that is fairly close to the average of the business. The *Entertainment and Devices Division* (EDD) possesses the highest growth of 16.6%. When analyzing the total revenue growth in the period from one year to another, growth was almost twice as high in 2011 compared to 2010 (Appendix 3).

The division with the highest revenue growth serves the market with the greatest importance for the purpose of this paper, namely the entertainment software industry. The growth in this industry can be recognized as the main driver for the acquisition of Activision Blizzard. Consequently, the following discussion will be directly linked to this division. For more information on the other divisions and segments the reader is referred to the first part of Appendix 1.

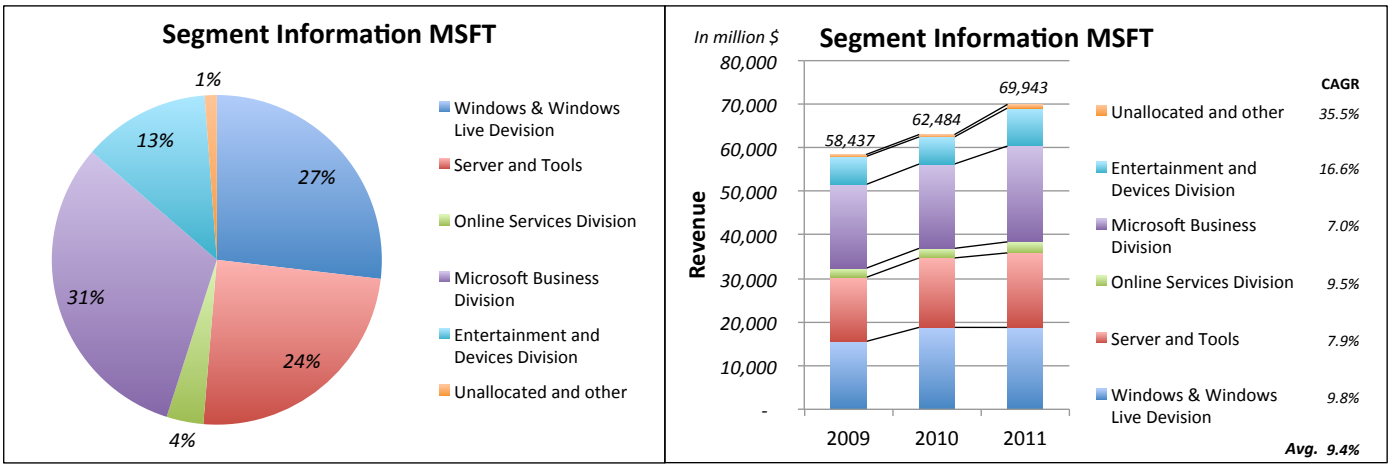



*Figure 9 and 10: Segment information for ATVI, based on information from (Activision Blizzard, Inc., 2011)*

The EDD offers products meant to entertain and connect people. Principal products and services marketed include Windows Phone, Mediaroom, the Xbox 360 and related products and accessories (detailed product overview and description can be found in Appendix 4). The products associated with the Xbox 360 account for a significant proportion of the revenues, almost 90% of the total over the three-year period. In 2011, Microsoft (2011a) sold 13.7 million Xbox 360 consoles, an increase of 33% from previous year sales of 10.3 million consoles. At present, Xbox 360 consoles have an installed base of 65.8 million worldwide (Microsoft Corporation, 2012d).

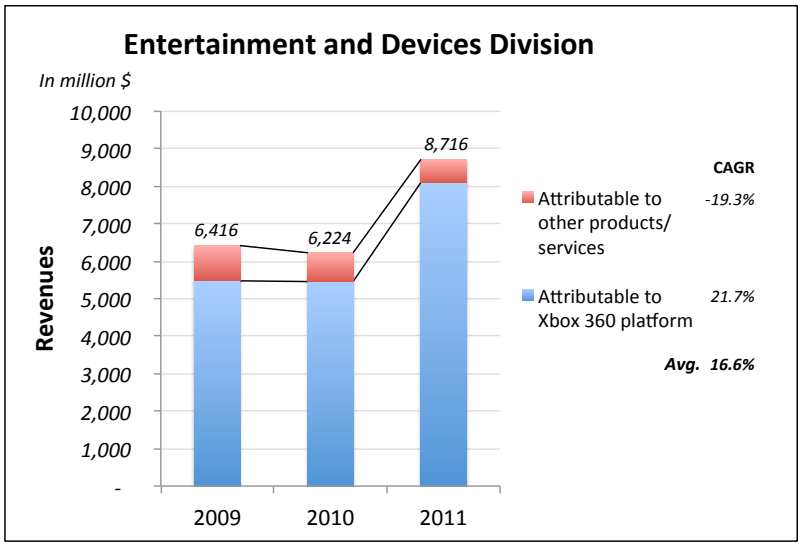



*Figure 11: Entertainment and Devices Division (Microsoft Corporation, 2011)*

The increased sales of Xbox 360 and associated products are the main cause for the recent revenue growth. Increased sales has also lead Microsoft to experience cost increases of 11.2% yoy in this segment as a result of higher cost of revenue, higher marketing expenses and increased cost of R&D (Microsoft Corporation, 2011a). The higher costs partly offsets the increase in revenues and results in an

overall increase in performance is in terms of operating income. Operating income for the division displays an average growth near 100% yoy for the period (Appendix 3).

There has been some recent development in the division in terms of products. In late 2010, Microsoft added Windows Phone operating system to its product portfolio (Microsoft Corporation, 2010b). Following the release, several mobile providers revealed devices powered by the operating system (e.g. HTC, LG, Samsung). Then, in early 2011, Microsoft announced the entrance into an alliance with Nokia with the intentions of providing market-leading mobile products and services to customers (Microsoft Corporation, 2011b). The first Windows phone was released by Nokia in October 2011, and has since then penetrated many new markets for Microsoft in this segment (e.g. Microsoft Corporation, 2012f).

There have also been developments in terms of the Xbox 360 console. Microsoft has carried out improvements on the console in order to deliver a more complete entertainment hub to customers. As of this reason, Microsoft has introduced new features such as motion- and voice control (Kinect), online access to music and TV-services and more entertainment content (Microsoft Corporation, 2011c).

How this division will preform in the future remains to see. However, the recent partnership with Nokia, and the increased entertainment content available on Xbox 360 seem to have yielded good financial results over the last three years. Following up these products properly could present sound prospects for future growth in the division.

### 3.1.2 Activision Blizzard, Inc. (ATVI)

Unlike Microsoft, Activision Blizzard has a very focused strategy and only serves one particular market, namely the interactive entertainment software market. More specifically, they are a worldwide leader in publishing interactive software products and content for computers, consoles, handheld devices and mobiles. They also operate their own distribution network in Europe. Their strategy is built on a focus to develop high-quality game content in order to generate a loyal customer base that continues to buy the games they publish (Activision Blizzard Inc., 2011a). This is illustrated in their highly popular game-sequels such as Call of Duty, World of Warcraft and StarCraft. They also hold many other titles such as Guitar Hero, James Bond 007 and the newly published Skylanders: Spyro's Adventure.

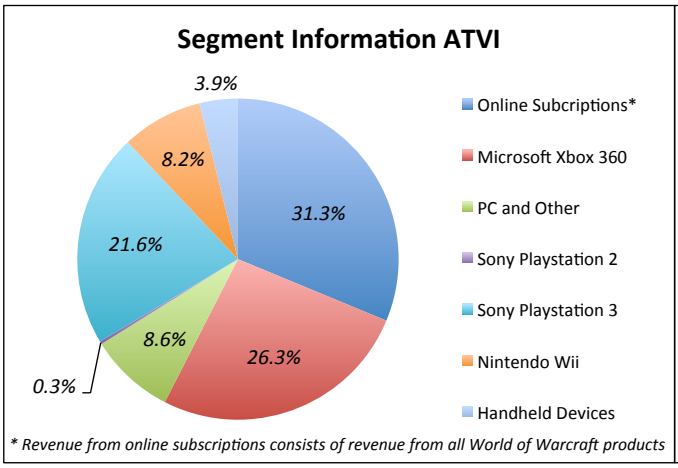
The capital structure of the company consists exclusively of shareholders' equity. This structure yields, similar to Microsoft, positive net cash due to a positive working capital, and a financing source arising from the operating cycle (Appendix 2). In addition, the company has large cash reserves that provide financial flexibility if needed.

Activision Blizzard has produced several games with online multiplayer functionality, and has an "active global community of millions of players" (Activision Blizzard Inc., 2011a, p. 8). Due to the nature of *some* of these products, they are subscription-based, meaning that the consumer pays regular fee to access the product contents and/or its additional features. Considering that Activision Blizzard has an active user base in excess of 30 million paying users (Activision Blizzard Inc., 2011b), this segment generates a substantial proportion of the company's revenues.

For the fiscal year 2011, Activision Blizzard generated revenues of US$4.8 billion, where 31.3% can be ascribed to the online segment just described. Other important segments include published games for the Xbox 360 and the PlayStation 3 console, also known as high-definition platforms (see Figures 12 and 13). All

© Robert Stenmark

together, these three segments account for 79% of all revenues, and they are contributing to most of the growth in the company. It is, however, important to note that the game-series Call of Duty, StarCraft and World of Warcraft accounts for a significant amount of these revenues (Activision Blizzard Inc., 2011a). In other words, the future earnings will be highly dependent on the continued success of these game-series.



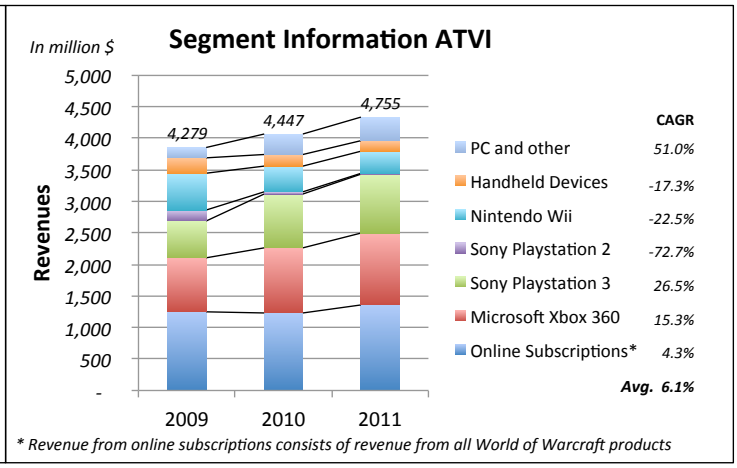




*Figure 12 and 13: Segment information for ATVI, based on information from (Activision Blizzard Inc., 2011a)*

An analysis of the cost development at Activision Blizzard shows that costs have been decreasing. Netting out the effects of impairments on intangible assets, the costs have decreased with an average of US$234 million per annum, or 6.2% yoy. The largest contributor to the decrease is the cost of sales, which has come as a consequence of a reduced number of game-titles published, and increased distribution through digital online channels (Activision Blizzard Inc., 2011a) (Appendix 5).

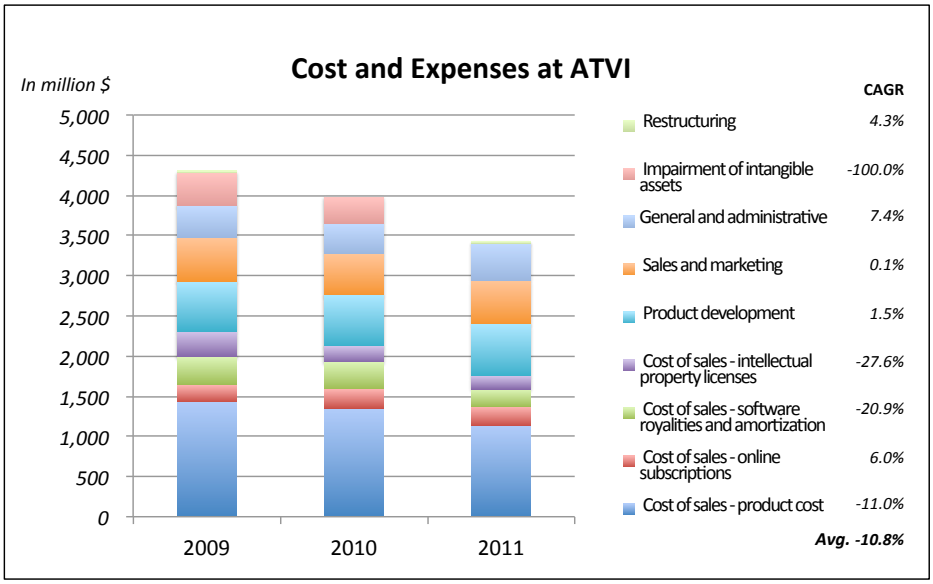



*Figure 14: Costs and Expenses ATVI, based on information from (Activision Blizzard Inc., 2011a)*

The increase in revenues and the subsequent decrease in costs have lead to a healthy increase on the bottom line. Over this three-year period, the company's net income has increased almost tenfold, from US$113 million to US$1.1 billion (Appendix 6). This sums up to an average growth of 209.9% yoy.

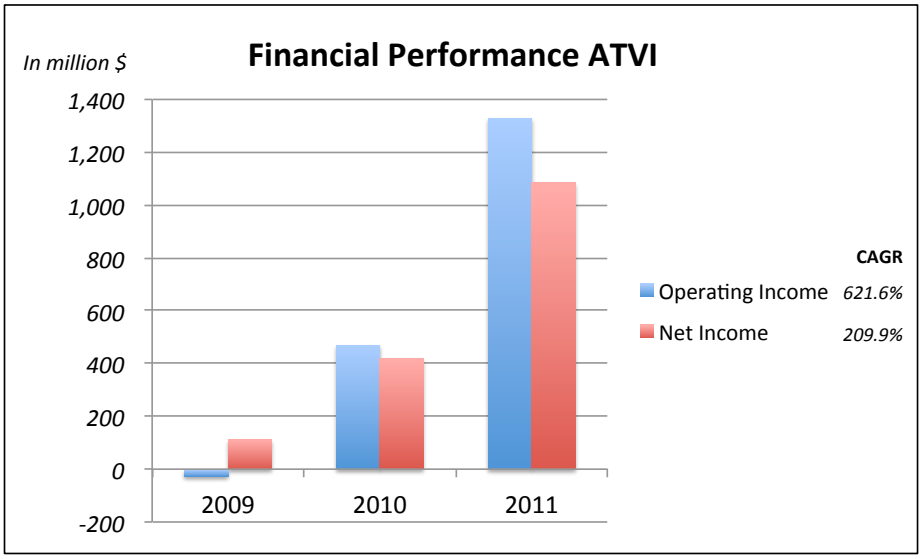



*Figure 15: Based on information from (Activision Blizzard Inc., 2011a)*

It should, however, be given a cautionary note about this performance. As noted earlier, the profitability is high dependent on the company's "ability to develop high quality games that will generate high unit sales volumes" (Activision Blizzard Inc., 2011a, p. 7). In addition, the release of new game-titles is very "hit" driven, meaning that only a small number of high quality titles often account for very large portions of the revenue (Activision Blizzard Inc., 2011a). Examples include Call of Duty: Black Ops, which achieved in excess of US$1 billion retail sales in 2010 (Activision Blizzard Inc., 2010); and Call of Duty: Modern Warfare 3, which had US$775 million in retail sales within five days of launch of the product (Activision Blizzard Inc., 2011a). On the other end of the scale are titles such as Guitar Hero, which suddenly dropped from US$1.7 billion in revenues to US$300 million (Nuttall, 2011a). In other words, performance could take a drastic change if some game-titles did not perform as well as expected, and consequently pull down the bottom line.

For the future, Activision Blizzard is focusing on the areas that it believes will make a positive impact on future operations of the business (Activision Blizzard Inc., 2011a). This means that it reduces investments in areas with lower potentials for profits, such as Guitar Hero, while focusing on building on the success of existing games, and developing new high quality game-series. One such game recently released is Skylanders: Spyro's Adventure, which is a game targeting the kids-segment. It combines the use of console gaming with toys (see Appendix 6 for game description), and was awarded the number 1 selling kids-title in 2011 (Activision Blizzard Inc., 2012b). Furthermore, the company intends to build on digital delivery of content and other services to establish a long-term relationship with its gamers in order to strengthen the online community of players. In order to do so they will continue to develop online product innovations, such as value-adding content and social networking features (Activision Blizzard Inc., 2011a). This way they are best positioned to increase popularity of their games and, accordingly, their share of loyal customers.

## 3.2 The Entertainment Software Publishing Industry

Worldwide, it exists a wide range of sectors and industries, and they are frequently intertwined and often appear to be of similar nature. As of this reason it

become common to classify the industries according to standards, such as SIC (e.g. Securities and Exchange Commission, 2012), NAICS (United States Census Bureau, 2012) or GICS® (Standard & Poor's, 2012). The industries in which Microsoft and Activision Blizzard are affiliated with can be found in Appendix 7, in addition to a description for each respective industry according to United States Census Bureau (2012). The following discussion's primary focus will be the industry in which the acquisition between Microsoft and Activision Blizzard will take place, namely the entertainment software industry.

The entertainment software industry is a segment within software publishing industry that focuses primarily on delivering products and services that entertain people. This is a multibillion-dollar industry, and in 2010 it enjoyed a worldwide consumer spending of US$67 billion (Gartner, Inc., 2011). The spending is not purely driven by hardcore gamers (see Figure 16 for gamer demographics), but also by consumers that seek to satisfy their needs in terms of interactive entertainment (Adolph, 2011; Los Angeles Times, 2012). Further, the actual companies operating in

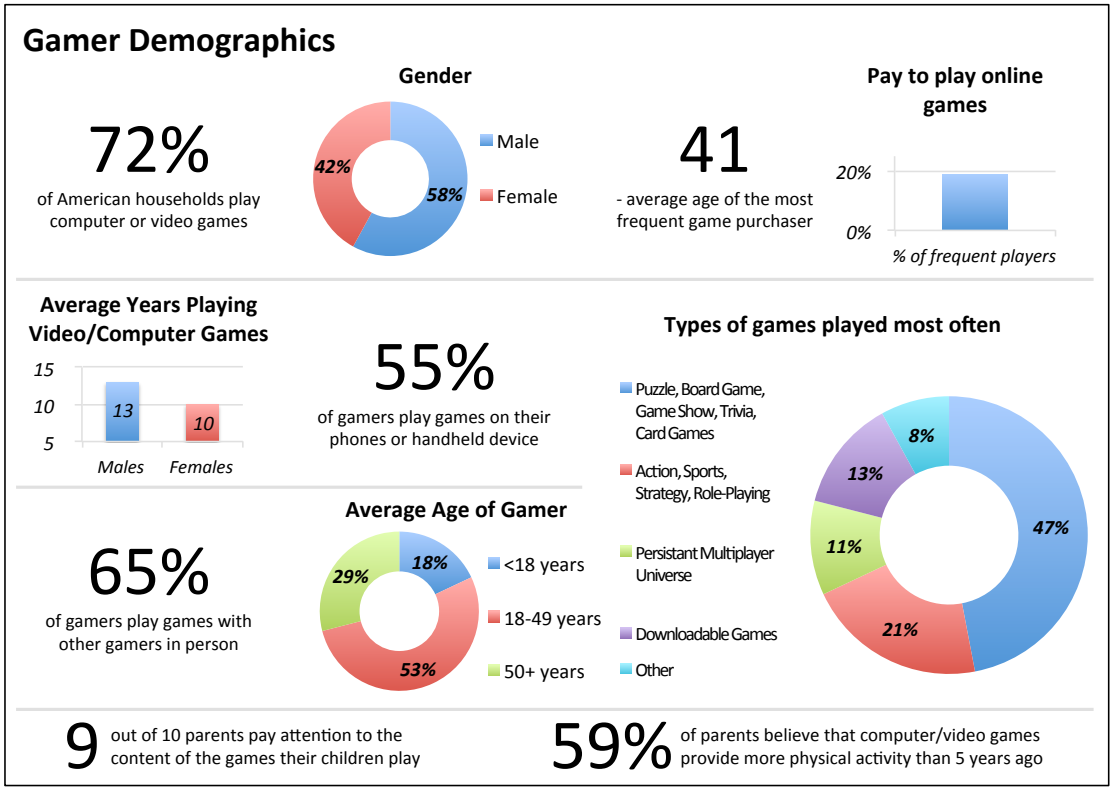



*Figure 16: Gamer demographics, based on information from (Entertainment Software Association, 2011)*

this industry is highly exposed to cyclicality. Consumer demand tend to be at its highest levels during the holiday buying season in the end of each year, while the quarter ending in June tends to have lower sales volumes (Electronic Arts Inc., 2011a; Activision Blizzard Inc., 2010; Microsoft Corporation, 2011a). Consequently, higher levels of revenues will be reported in the second half of the year. This cyclicality also exposes the companies to operational risks that can affect their bottom line, i.e. if they are unable to release products in a timely manner, it may critically hurt the profitability of the firm.

### 3.2.1 The Hardware Providers

In the industry, it can be made distinction between the market for interactive entertainment hardware and interactive entertainment products and content, such as games. The hardware market has experienced an allover positive annual growth in market value over the last five years of 4.7%. This growth is mainly affected by high market values for the fiscal years 2008, 2010 and 2011. The positive growth is expected to continue to somewhat higher levels due to increased usage of the entertainment services offered by the gaming consoles (Gartner, Inc., 2011).

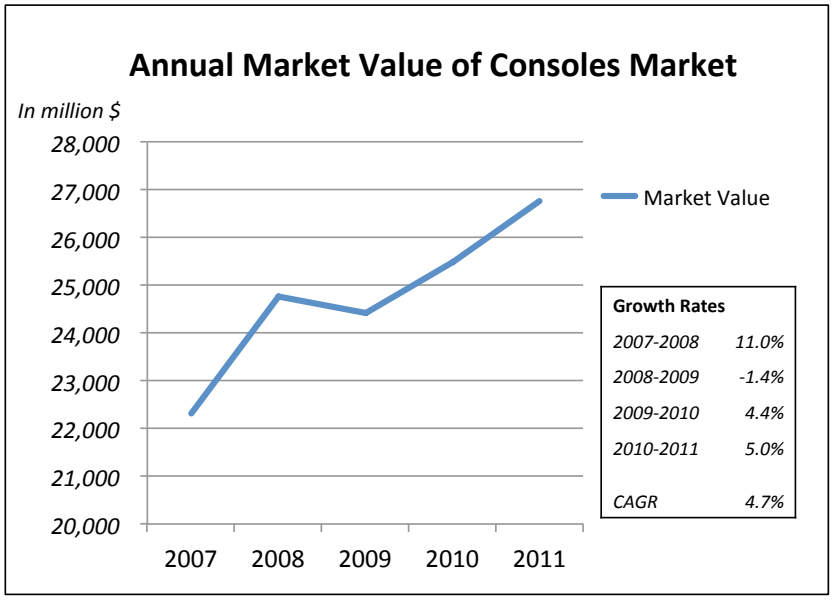



*Figure 17: Market Value of Consoles, based on information from (MarketLine 2012c)*

The market for interactive entertainment hardware has for long been very focused, with Microsoft, Sony Corporation and Nintendo Company as the main players. These three companies are offering consoles, such as Xbox 360 (Microsoft), PlayStation 3 (Sony) and Wii (Nintendo), in addition to other handheld devices, such as PSP Vita (Sony) and 3DS (Nintendo). Xbox 360 and PlayStation 3 are often referred to as core gamer platforms, or "high definition" platforms, while Wii and handheld devices are defined as casual platforms (Karimzad, Grant, & Fassler, 2012). Below is an illustration of each manufacturer's share of the installed hardware base, based on life-to-date (LTD) data (Microsoft Corporation, 2012g; Nintendo Co., Ltd., 2012; Sony Computer Entertainment, Inc., 2012). The hardware market is characterized by a high degree of competition between the companies, as they are delivering fairly similar products to the end consumer. The Nintendo Wii has focused directly on interactive gameplay using lower graphics at a lower price point to attract a broader user-base (USA Today, 2006). Its success has granted it a higher installed hardware base than its competitors. However, the introduction of similar interactive products for Xbox (Kinect) and PlayStation 3 (Move) in 2010 has lead to tougher competition (Reuters, 2012) and sales has gradually declined. Other reasons for its loss of ground are the lack of high definition graphics, the little interest from third-party publishers and the natural loss of market share as the console ages (Karimzad, Grant, & Fassler, 2012).

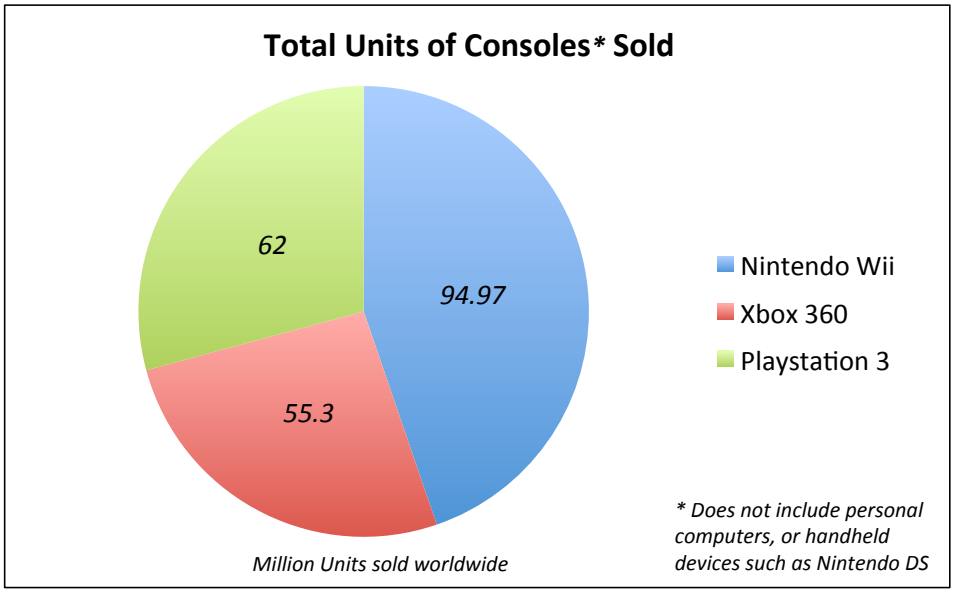



*Figure 18: Total Units of Consoles Sold, based on LTD-numbers*

Analyzing the installed hardware base over the last three years we can follow Nintendo's trend compared to the trend of Microsoft and Sony (Appendix 8). In 2011, the total installed hardware base increased with 20.8% or 36.6 million consoles. For the high definition platforms this was equivalent to an increase of approximately 30% compared to existing hardware base. In contrast, the Wii only experienced a slight increase of 10%. Evaluating the Wii's hardware increase in year-over-year terms reveals that, compared to the sales increase in 2010, the hardware sales in 2011 had decreased by 40% yoy. Similar can be observed for 2010 and 2009, where the decrease was 26.5% yoy and 20.9% yoy, respectively. Despite the good performance of the high definition platforms, the low performance of the Wii creates a collective negative yoy rate for the whole three-year period. This can point to higher popularity of high definition platforms, and that the Wii is approaching the late stage in its product life cycle. However, an alternative explanation could be the fact that most of the consoles are approaching the latter part of the product life cycle. As they are approaching this part they are lowering their price points and are consequently able to attract consumers in the segment formerly governed by the Wii.

In terms of the geographical expansion of the consoles market, the total market for gaming consoles is mainly driven by sales in Europe and in the U.S., with 40.0% and 32.5% of the global market, respectively (MarketLine, 2012a). The rest of the world holds a somewhat smaller share of 27.4% of the global market. In recent years, the European market has experienced the most apparent growth, tightly followed by the United States (Appendix 9). These markets have increased their markets share by 3.5% at the expense of market share formerly held by the category "*Rest of the World*." The increase, accompanied by higher growth rates, has lead to increased importance of the North American and European markets (MarketLine, 2012a; MarketLine, 2012b; MarketLine, 2012c).

In the last couple of years, the manufacturers of interactive hardware have been facing a tougher environment as mobile phones and tablets have become increasingly popular means for playing games (e.g. Adolph, 2011; Mintel Group Ltd., 2011). This is especially apparent for manufacturers of portable and handheld platforms. The observed demand for these types of platforms has declined as a consequence of the expansion in the market for mobile gaming (Karimzad, Grant, & Fassler, 2012). The current generation smartphones and tablets are provided with

high-resolution screens that make them able to perform well as gaming platforms (PwC, 2011). The gaming platforms that recently have experienced the most explosive growth are social networks and mobile phones (Bilton, 2011). These types of channels are increasingly offering games at lower or no cost and are often subsidized through in-game advertising. It is believed that the mobile gaming segment will have an ever more important role in the interactive entertainment industry in the future, and that its market share will increase to 20% of the gaming software market by 2015 (Gartner, Inc., 2011).

### 3.2.2 The Content Providers

The other part of the industry is the publishers of software and content designed for consoles and handheld devices. The manufacturers are among the main players here, but there are also an abundant number of third-party publishers. This part of the market absorbs about two-thirds of total consumer spending (Gartner, Inc., 2011), and is hence the most important market of the industry. As the profit opportunities in this market is immense, the participants in this market regularly face intense competition from new and existing players (Activision Blizzard Inc., 2011a). In terms of revenues, the largest third-party publishers are Activision Blizzard (US$4.8 billion), Electronic Arts (US$3.6 billion), Konami (US$3.2 billion) and Ubisoft Entertainment (€1.4 billion).

The interactive software market is characterized by high levels of releases around the year-end holiday buying season, in line with the cyclicality of the industry. This is particularly evident for well-known game releases. The market among the publishers is very fragmented, and hence even large publishers hold a relatively small share of the market, e.g. Electronic Arts held a leading market share of 16% in the Western markets in 2011 (Electronic Arts Inc., 2011b). In addition, each respective company's market share and growth is highly dependent on the achieving "hit" titles. The reason for this is that the consumers tend to place their game-title preference over their preference for a given publisher. To put this in perspective, there were over 300 games published in 2011 (IMDb, 2012) and the top 10 game titles accounted for 26% of the sales in the U.S. (Activision Blizzard Inc., 2011a). This means that many developers may face a situation where games do not sell as anticipated and hence lowers the company's bottom line due to the sunk costs associated with developing and marketing the given game. To build on the effect that origins from "hit" titles, many publishers have shifted their focus to development of game-titles that may become future popular game franchises, and to the continued development of existing game franchises that have proved to be successful (e.g. Electronic Arts Inc., 2011a; THQ, 2012). The existing game franchises tend to attract more consumers as they have built up a reputation for delivering high-quality entertainment experiences to the consumer.

In addition to be a very "hit" driven industry, the software sales are is to some degree driven by prior-year sales of gaming consoles (Karimzad, Grant, & Fassler, 2012), i.e. a higher number of consoles sold prior year should advocate a higher base of prospective software buyers and hence increase the likelihood of additional software sales this year. According to the discussion on hardware demand, this should suggest that over the last few years the entertainment software providers should have been experiencing increasing revenues for games designed for high definition platforms, while experiencing declining revenues for games designed for casual platforms. In fact, this is a trend observed among many software providers (e.g. Take-

Two Interactive Software, Inc., 2011; Electronic Arts Inc., 2011a). For the industry, the number of high definition units sold has had double-digit growth up until 2011 (Appendix 10), while casual games have experienced an average negative growth of 18% since 2008 (Karimzad, Grant, & Fassler, 2012).

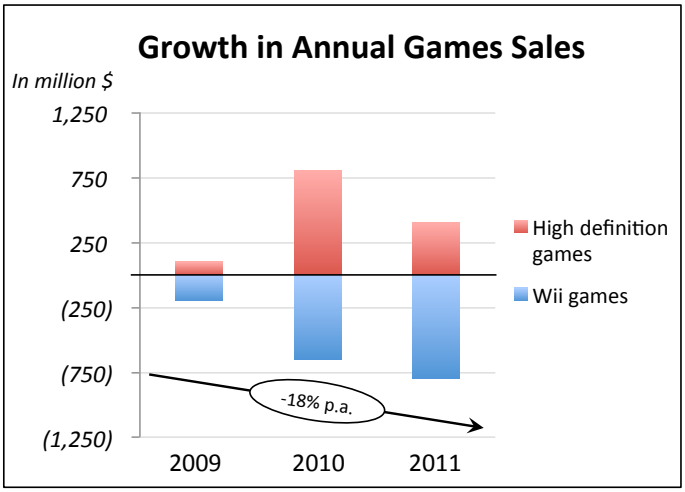



*Figure 19: Based on information from (Karimzad, Grant, & Fassler, 2012)*

The hardware-software relationship would also suggest that a similar trend would be observed for 2012. It should, however, be noted that Nintendo has the largest exposure to portable games (Karimzad, Grant, & Fassler, 2012), and hence reduces third-party publishers' exposure to the lower sales associated with casual games.

Over the last few years, the hardware manufacturers have continued to develop the entertainment services offered through their platforms. With this evolution, and the fact that the number of consumers with broadband access has nearly doubled over the last three years (ITU, 2011), online services have become increasingly popular. The growing online popularity has enabled game publishers to enjoy some of the network-effects that other industries are benefit from, e.g. the telecommunications industry. Consequently, publishers are now able to provide its consumers with additional online content and features that extends the lifetime of the product. This enables the publishers to benefit from new revenue-models, and is at the same time a means to build a longer-term relationship to its consumers. Having a longer-term relationship with consumers can facilitate the attraction of a more loyal base of buyers. Furthermore, numerous publishers are offering direct online distribution of some of their games to their consumers, e.g. Activision Blizzard (Activision Blizzard Inc., 2011a), Electronic Arts (Electronic Arts Inc., 2011a). Figure 20, on the next page, illustrate the digital revenues for the two largest third-party publishers in the industry, and gives a perspective on the increased importance of digital online distribution. The online distribution networks can be recognized as a strength in the development in the market for games publishing, because it provides game developers and publishers with the opportunity to sell games at higher margins and simultaneously enabling shorter time-to-market cycles. In other words, the publishers lowers their distribution cost, while the consumers benefit from more frequent content- and game-title releases. Still, the online distribution can also possibly pose a threat to existing market players as it lowers barriers to entry to the market through the lower cost of distribution. This type of entry is particularly apparent in third-party distribution channels for mobile-, tablet- and computer games such as Apple App Store or Google play. As noted earlier, the mobile segment and social networks are expected to gain an additional market share of 5%, reaching 20%

market share, in the entertainment software industry by the year 2015 (Gartner, Inc., 2011). It is highly probable that all of these digital distribution channels receive increased importance in the future, but a change to online-only distribution seems less likely, at least in the short-term perspective. Increased online- and digital revenues will yield higher margins and result in improved profitability for those companies that are able to convince its consumers to make active use of these distribution channels.

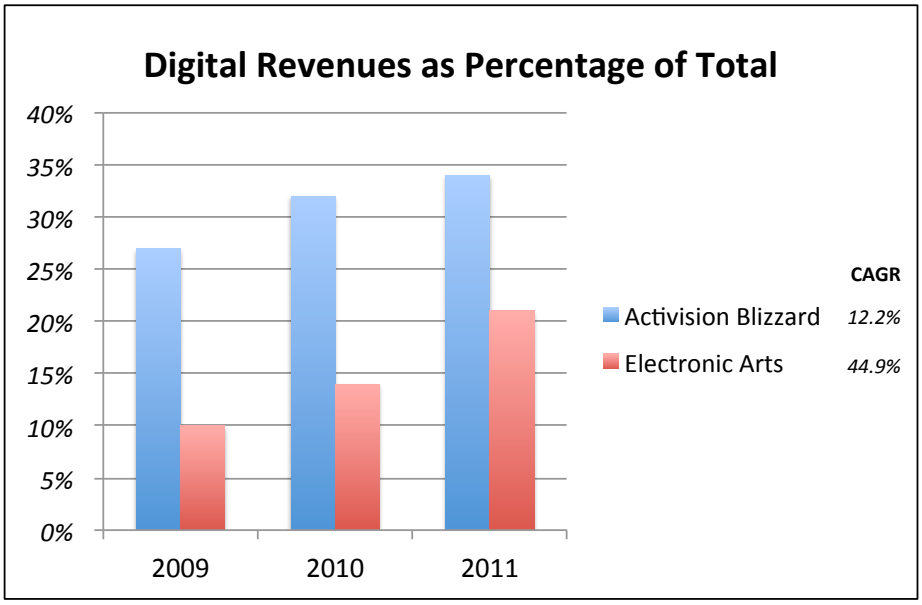


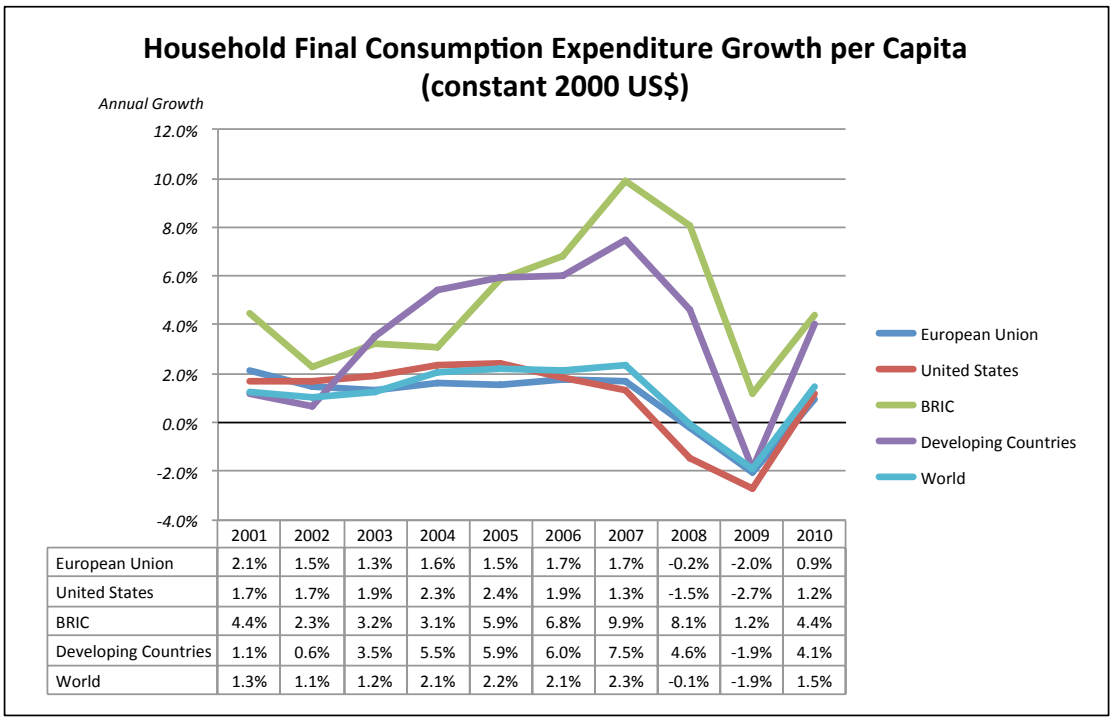

*Figure 20: Based on information from (Activision Blizzard Inc., 2011a; Electronic Arts Inc., 2011a)*

### 3.2.3 Trends in the Industry and Future Developments

Overall, the demand for entertainment software products will be highly dependent on how much, and where consumers spend their money. If less money is spent, spending on will be naturally reduced over all product groups. In other words, if drastic negative movements in consumer spending patters were observed, a likewise trend in the spending on entertainment products would be highly probable. Analyzing the trend in consumer spending over the last decade (2001-2010) through household final consumption expenditure growth per capita (The World Bank Group, 2012), it can be observed that the world consumer spending has experienced a fairly stable growth rate of 1.1-2.3% p.a. up until 2008. In 2008, the observed market risks increased and a higher level of uncertainty among consumers could be discerned as effects of the financial crisis kicked in. These effects have created an overall lower consumer spending on a worldwide basis. This trend is depicted in Figure 21 on the next page. In terms of the industry, the most important markets are currently Europe and the U.S. These geographical regions have experienced trends that are very similar to that of the world, and hence also observed lower levels of consumer spending as well as negative growth. This trend is likely to have impacted the sales of the industry, and consequently lowering observed revenues compared to the levels that would have been observed with a consumer spending similar to that of the period 2001-2007.

Other markets that may become important for the industry in the future include emerging countries, such as BRIC countries. These regions have experienced a consumption pattern very similar to the Western world, albeit much higher levels of growth. In the years before the financial crisis, these countries experienced high single digit growth rates, and although a decline in growth could be observed after the

financial crisis, negative growth has not been present. If this trend continues, and if these countries' purchasing power increases, it is highly likely that these markets may become increasingly important targets for entertainment products in the future. Furthermore, developing countries are also experiencing high levels of growth in consumer spending, although not as high as for emerging countries. These countries currently have purchasing power that is considerably lower than in other parts of the world and have consumption priorities are very different, which makes them unsuitable target markets for the software entertainment products. However, in the very long-term perspective, these economies may as well receive increased attention as prospective markets.




| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|
| European Union | 2.1% | 1.5% | 1.3% | 1.6% | 1.5% | 1.7% | 1.7% | -0.2% | -2.0% | 0.9% |
| United States | 1.7% | 1.7% | 1.9% | 2.3% | 2.4% | 1.9% | 1.3% | -1.5% | -2.7% | 1.2% |
| BRIC | 4.4% | 2.3% | 3.2% | 3.1% | 5.9% | 6.8% | 9.9% | 8.1% | 1.2% | 4.4% |
| Developing Countries | 1.1% | 0.6% | 3.5% | 5.5% | 5.9% | 6.0% | 7.5% | 4.6% | -1.9% | 4.1% |
| World | 1.3% | 1.1% | 1.2% | 2.1% | 2.2% | 2.1% | 2.3% | -0.1% | -1.9% | 1.5% |

*Figure 21: Household Final Consumption Expenditure, based on information from (The World Bank Group, 2012)*

Lately, manufacturers Microsoft and Sony have attracted a broader range of prospective buyers by increasing their emphasis on delivering a home entertainment system to their consumers. The console is no longer a pure gaming-console but also offers multiple other services such as music streaming, TV-series and movie rentals. Furthermore, increased online compatibility and the additional services provided by both Microsoft and Sony has equipped them both with online communities of millions of players. Through these communities one can communicate with other members, compare game statistics and other services that make the entertainment experience more social. These communities have received escalated attention in recent years, as Microsoft and Sony desire to make the entertainment experience a part of the consumers' day-to-day lifestyle.

The recent increases in sales of high definition games platforms and associated software gives some indications that consumers value high quality gaming and entertainment experiences that these consoles provide. It can also be observed a similar trend among many software publishers, which shift their focus towards a higher exposure to high definition games publishing (e.g. Activision Blizzard Inc., 2011a; Electronic Arts Inc., 2011a; THQ, 2012). For the market leaders, Activision Blizzard and Electronic Arts, such moves have led to improvements in margins and stabilizing operating trends (Karimzad, Grant, & Fassler, 2012). It may be that these

observed improvements in margins have led additional companies to pursue similar strategies, but it is also possible that increased competition from mobile and tablet gaming segments have led to the shift.

There have been some recent developments in terms of new hardware in the industry. In December last year, Sony released its new portable gaming platform PS Vita. The portable platform released with a price somewhat lower than existing products in the same category, as to compete with the growing competition form mobiles and tablets (Nuttall, 2011b). In contrast with early beliefs, the new product experienced a slow adoption in the markets where it has been introduced and has performed below expectations (Karimzad, Grant, & Fassler, 2012). Moreover, there are rumors around the future release of several next generation consoles from all the major hardware providers. At the Electronic Entertainment Expo in 2011, Nintendo expressed its intensions of launching the next generation Wii console in the near future. Nintendo has recently reported pullback on sales, and their financial situation does not look bright at the moment (Bloomberg, 2011a). Improvement of their current situation, and a follow through on the expectations created by the early announcement of the product, points towards a likely launch of the console near the year-end holiday season this year. The new console, Wii U, is expected to be equipped with high definition capabilities and the controller is said to take the form of a tablet (Nintendo, 2011). Upon launch of the current generation Wii console, Nintendo sold an estimate of 1,3 million units of the product worldwide (IGN, 2006; Eurogamer, 2006; GamesIndustry International, 2006a; GamesIndustry International, 2006b). This could give an indication of what sales numbers that may be expected after the launch of the Wii U. However, the real question is if the new console offers capabilities that exceed the existing platforms and if these capabilities are powerful enough to attract as many early adopters as the current generation Wii. Furthermore, rumors also flourish around new consoles from Microsoft and Sony. However, unlike the Wii U, the consensus expects the launch of the next generation high definition consoles to be postponed to 2013 (Karimzad, Grant, & Fassler, 2012). The relevant questions in relation to these consoles are the price point intended for the consoles and if they are able to deliver any improved graphics power, which was the main driver for adoption of the current generation consoles (Karimzad, Grant, & Fassler, 2012). It may also be that the next generation of these consoles will have increased focus on home entertainment that may lead to lower interest of upgrading by of core gamers (Karimzad, Grant, & Fassler, 2012).

In relation to announcement of new game consoles, the expectations of the market are often triggered and rumors of new features flourish around the Internet. One would think that hardware sales would slow down somewhat in response to the consumers' anticipation for the next generation consoles launch, but no notable decline is observed. As noted earlier, software sales are to some extent related to prior-year hardware sales. In addition, expectations of new consoles releases tend to slow down software sales, as consumers wait out the new console releases (Karimzad, Grant, & Fassler, 2012). This often leads to a decline in software revenues in the year of launch, although a rebound is frequently observed in the first years after the launch. This has been particularly apparent for software products when Microsoft or Sony has released their new generation consoles in the past (Karimzad, Grant, & Fassler, 2012).

In terms of software, the major recent trends have been briefly discussed above as the trends towards a more concentrated portfolio of game titles, increases in online content from the publishers and emergence of new sales models. An increasingly larger part of the publishing industry is recognizing that revenues are

created in the form of a few very successful titles. In this belief, many publishers have opted for an operational model that focuses on the release of fewer high quality game-titles (e.g. Activision Blizzard Inc., 2011a; Electronic Arts Inc., 2011a; Take-Two Interactive Software, Inc., 2011). Furthermore, the product cycles for games are shortening. To mitigate some of this effect, the publishers are providing the consumers with additional game content as well as online services. The development of these additional features for the games has made it possible for publishers to employ new sales models, such as subscription-based services and fee-based downloads, to increase revenues. In addition to these trends, there has been a development towards reduced demand through retail distribution and growing sales of used video games (Karimzad, Grant, & Fassler, 2012). The reduced demand through the retail channel comes as a consequence of changes in retail sales patterns, which has reduced number of sales following a launch (Electronic Arts Inc., 2011a). Besides, increased sale of used games through the retail-channel is contributing to this trend. Retailers, such as GameStop and Best Buy, are earning higher margins through the sale of used games, and have hence increased their focus on selling this type of games to their target market (THQ Inc., 2011). Moreover, consumers are attracted to used games for their lower prices compared to new games (Electronic Arts Inc., 2011a), and the popular titles often arrive to the used market within the span of a couple of months (Karimzad, Grant, & Fassler, 2012). The retailers' focus on selling used titles leads to lower demand for new games and could consequently have a negative effect on sales for the software publishers. Last but not least, it can be observed a tendency for many publishers (Activision Blizzard Inc., 2011a; Electronic Arts Inc., 2011a; THQ Inc., 2011) to experience a decreasing proportion of costs to revenues. Analyzing various software-publishing companies, there appears to exist few common explanations for this trend apart from lower cost of sales due to fewer sold titles. Independently, many of these companies have cost reductions that are more or less idiosyncratic and that do not share common traits with other companies. Nevertheless, it should be noted that even though many companies are able to report lower costs, this is not unanimous for the whole industry.

Overall, the future in the entertainment software industry has positive outlooks. Throughout the next two years it is expected that each of the major hardware suppliers will launch a new generation of their game console. If the Wii U follows through with the high definition experience it promises, it could also benefit the publishers that have increased their exposure to high definition game publishing. This could create larger opportunities for expanding popular game franchises to the new console, and reaping additional revenues from the software market. Even though software sales historically has declined in relation to new console releases, it is not expected any major swifts in revenues across the industry for the short term. Historically, higher sales volumes are awaited for the years following new launches, correcting for lower sales volumes in the introductory year (Karimzad, Grant, & Fassler, 2012). Indirectly, future success of entertainment software will be highly dependent on the success of the next generation consoles. On one hand, if these consoles are able to capture an even broader range of consumers this may be reflected in the financial performance of the software publishers. On the other hand, if the new consoles deliver well below expectations, software publisher can be caught in a situation where sales starts to decline due to the low sales volumes of hardware. Furthermore, it is expected that the publishers will continue to build on the new sales models and the downloadable content in order to increase post-sale revenues and retain consumers as long as possible.

© Robert Stenmark

The future market performance for the overall industry is expected to offer the whole industry opportunities of growth (Gartner, Inc., 2011). The hardware providers are expected to maintain a constant proportion of the total market, while software providers are expected to lose some market share to online-game spending. However, subscription-based software services is expecting annual increases of up to 27% up until 2015, which gives software publishers room to counteract some of the effects of lower software volumes. The expected market performance for the next years can be illustrated as in Figure 22.

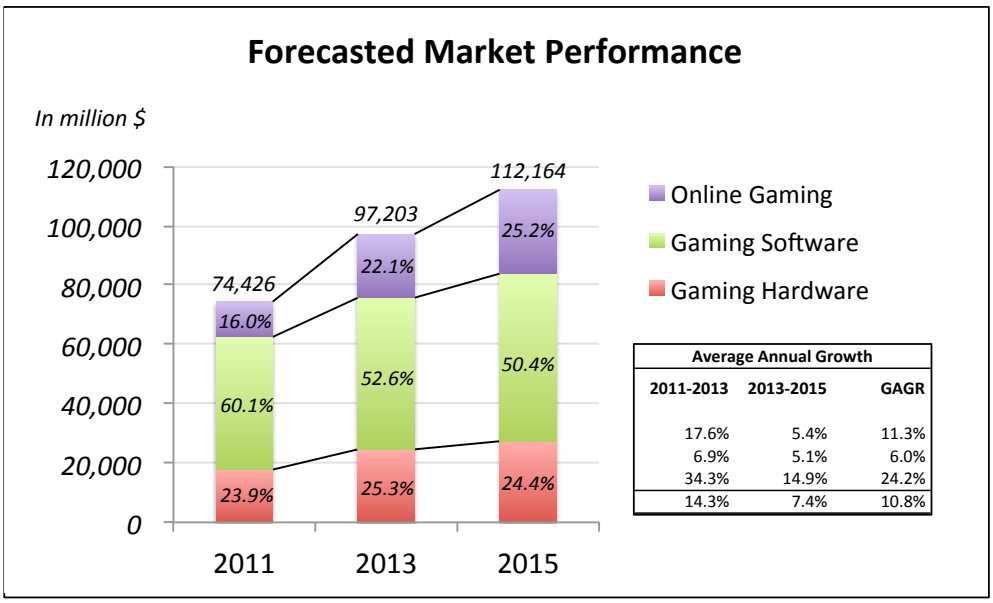



*Figure 22: Forecasted Market Performance, based on information from (Gartner, Inc., 2011)*

The performance illustrated in the figure appears reasonable. The hardware segment is expected to remain approximately constant to the total market. Furthermore, this segment is expected to have a growth that is high in the period 2011-2013, while spending growth declines in the following period. This would be a sensible reaction to the release of the next generation consoles in 2012 and 2013, followed by a period of stabilization of revenues. Gaming software, however, is expected to lose some headway to online-gaming. Lower priced or free-online games are expected to lure consumers away from the traditional gaming software, which will yield lower market shares for this segment. Taking everything into account, the whole industry may experience high levels of growth if the right strategies are implemented and that focus is centered on the segments that prove to yield good returns.

# 4. Rationale For the Proposed Acquisition

As discussed in the Company and Industry Analysis section, the entertainment software industry is expected to increase. This is not only in terms of video games, but also in terms of online games that are accessible through computers, tablets and mobile phones. To put the expected growth in perspective, some sources have cited that they are expecting the software entertainment industry to bypass the music industry, and triple this market by 2014 (Edgecliffe-Johnson, 2010).

The above analysis showed that both Microsoft and Activision Blizzard, historically, have reported desirable results and that they both face fairly good prospects for the future of the entertainment software industry. On the one hand, the importance of Microsoft's Entertainment and Devices division has increased, both in terms of absolute value of its revenues and in terms of its importance in relation to the overall revenues. Moreover, the division has experienced an average growth of 16.6% yoy over the last three years. On the other hand, Activision Blizzard has reported increasing revenues and decreasing costs, which has led to the recognition of an average growth in net income exceeding 200% yoy. The two companies, if well managed, can complement each other's resources and intellectual capital in order to be better prepared to face the expected increase in competition in this industry.

Microsoft currently has a long track record for acquisitions and partnerships, and they have a strategy that aims at attaining long-term growth prospects and technological leadership through their acquisitions (Microsoft Corporation, 2011a). By attaining Activision Blizzard, Microsoft is acting in line with their acquisition strategy and at the same time, they are also able to expand within the software entertainment industry and increase their focus in a market that is expected to receive increased importance in the future.

The merger can have several positive side effects for both companies. In terms of games, the acquisition opens the opportunity for Activision Blizzard to develop games that have an even better compatibility with the existing and next generation consoles by Microsoft, and utilize Microsoft's cloud services to distribute software products to the end-consumer. In addition, some popular game-titles may also be released exclusively for the Xbox platform in order to increase the popularity of this entertainment platform. Furthermore, there are also direct opportunities for Activision Blizzard to increase their proportion of mobile games by creating games for Microsoft's Windows Phone.

As both companies do some sort of software development, cost reductions should also be expected. The first, and most obvious, cost reduction will be the elimination of licensing fees, which are costs that are paid to the console manufacturer for the right to publish games. In the same vain, software products usually go through an approval process by the console manufacturer that will be shortened if the two companies operate as one. Both these cost reductions will lead to higher margins, and will affect the bottom line. Moreover, other possible cost reductions include lower marketing expenses by cross-marketing products, the use of Activision Blizzard's distribution network to distribute Microsoft products, and lowering combined costs of fighting the trend of software piracy.

The merger can also yield opportunities of risk-reduction. Offering video games for multiple consoles can smoothen revenues for Microsoft, if the Xbox were to experience declining sales. While Activision Blizzard can go through a smoother process in order to approve their new games. This will lower the risk of failing to launch products in the year-end holiday season.

© Robert Stenmark

Overall, the two companies possess intellectual capital and certain skills that may be valuable in a potential merger and that may create synergies. The companies also share common traits that enables a potential increase technological expertize in entertainment software, cost reductions, and the possibility of higher consumer demand.

© Robert Stenmark

# 5. Recent Stock Performance

After the recent financial crisis most advanced economies have experienced a downturn. The year 2011 was no different, and was characterized by macroeconomic instability and volatile equity markets. Most advanced economies experienced the phenomenon of flight-to-quality, i.e. investors fled from the uncertain equity markets and pursued safer investments, such as government bonds, or cash. Although many companies improved performance and could point to positive earnings, it still did not persuade the majority of investors to rush back to the equity markets.

When it comes to Microsoft and Activision they appear no different than the rest of the market. Figure 23 below illustrates the cumulative total return on a $100.00 investment in either stock (ATVI or MSFT) or index (IXIC), including reinvestment of dividends (for an illustration of daily stock data see Appendix 11). Although the both companies can refer to good financial performance throughout the year, none of the stocks or the index performed very well, and they all drew to a close of 2011 with a negative return on investment. Nevertheless, the start of 2012 appears to have slightly better outlooks, and returns are making its way in the positive direction.

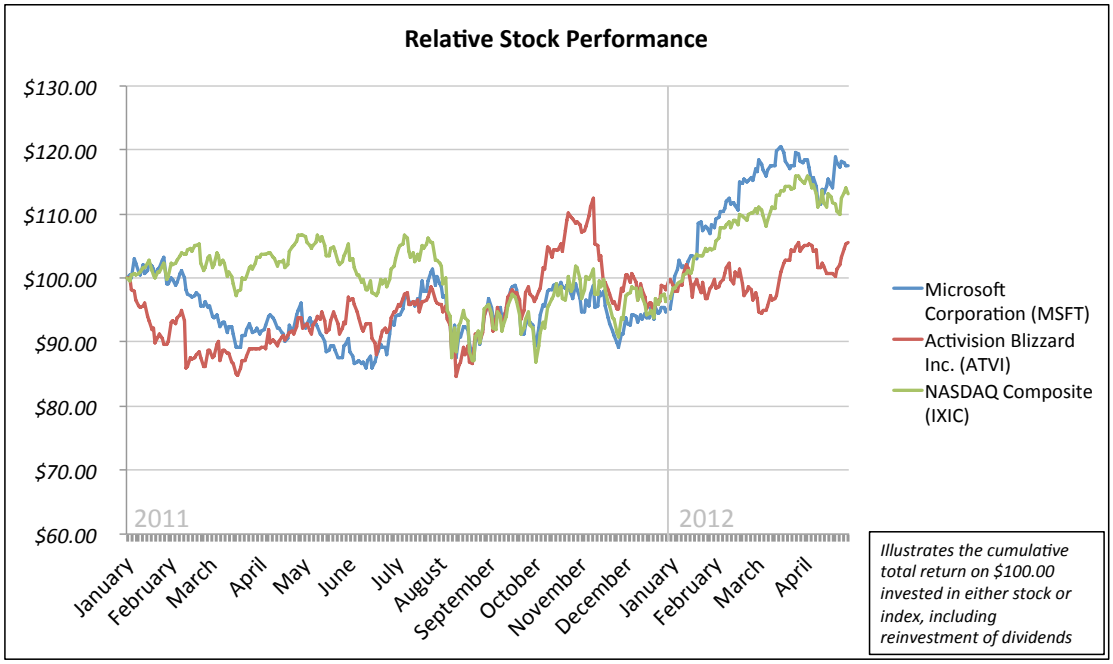



*Figure 23: Historical Relative Performance of Microsoft Corporation (MSFT) and Activision Blizzard Inc. (ATVI)*

A summary of relevant stock information for Microsoft and Activision Blizzard can be observed in Table 2. This table will be relevant when comparing the calculated stock price to the historical and current values of the stock.

**Stock Information**

| | Microsoft Corporation | Activision Blizzard Inc. |
|---|---|---|
| Average 2011 | $25.36 | $11.52 |
| Average 2012 | $30.53 | $12.22 |
| Range 2011 | $23.08 - $27.76 | $10.28 - $13.73 |
| Range 2012 | $26.42 - $32.64 | $11.50 - $12.88 |

*The average stock data are based on stock closing price adjusted for dividends and stock splits. The stock data from 2012 is based the months January through April.*

*Table 2: Historical Stock Information for Microsoft and Activision Blizzard*

# 6. Standalone Valuation

In order to reach a value for the merged company with synergies, a separate valuation of each of the companies is necessary. To perform separate valuations for the two companies, forecasts of the future performance have to be modeled to form the foundation for potential value-creation opportunities for each respective company. The future value-creation opportunities, or potential growth, provides information that enables the execution of a valuation. The following valuations are based on data collected on past performance of the companies as well as past growth and forecasts for each of the markets they operate within. The past performance assessed, are using information that is made publicly available through each company's web site and filings to the U.S. Securities and Exchange Commission (SEC), and for this reason, does not include any internal or private information that may be available to management or employees associated with the company. It should be noted that both Microsoft and Activision Blizzard recently has undergone restructuration of their businesses, and for this reason historical information beyond the last three years is unsuitable for direct comparisons. The forecasts for the various markets are built on market research from third-party publishers, as to obtain the most proper assessment of the future potential for each market. Observe that all assessments of future performance are subject to great uncertainty and may for this reason not perfectly reflect the future.

As stated in the literature review, the following valuations are performed using the weighted-average cost of capital approach and the APV approach. The different valuation approaches rely on uniform assumptions about the future, and should hence produce fairly similar results. Furthermore, using two approaches to the valuation allows for an evaluation of the valuation that lead to a more reliable estimate for the value of each respective company. Finally, in the end of the section, a sensitivity analysis has been carried out on the valuations in order to reflect on on essential valuation inputs that may alter the valuation.

## 6.1 Performance Forecast and Valuation

When forecasting performance in order to perform a valuation, the factors that should be given the uttermost attention are the components of the free cash flow formula. These components represent the cash flows available to all claimholders of the company for each given year, and when forecasted, it put forth the value created for the claimholders in the long term.

$$Free\ Cash\ Flow\ to\ Firm = EBITA(1 - T_C) - (CapEx - Depreciation) - \Delta WC$$

The formula's components are assessed for each company, starting with revenues and costs to find the operating income, and consequently the EBITA. Subsequently, the other components of the formula are forecasted. Finally, after forecasting the free cash flows, an analysis of the relevant financial leverage and the cost of capital have been performed. These parameters provide the necessary information to determine a relevant value for Microsoft and Activision Blizzard.

The valuations are based on a quite lengthy forecast of 10 years. This may appear as a relatively long forecasting period. However, the software publishing industry is facing an era of faster paced technological developments, shorter product lifecycles, and intensified competition. Using a long-term forecast, will allow for a

better representation of the potential growth and let the different segments stabilize before applying the terminal value. All forecasts are performed in real terms, i.e. the effects of price increases (inflation) are not incorporated in the forecasts. The use of real terms or nominal terms does not matter for the valuation, and should optimally yield the same result as long as their application is consistent. Furthermore, the relevant financial leverage that is applied for each company is equal to the average industry debt-to-equity ratio in the long term.

### 6.1.1 Microsoft Corporation

In this section, the components of the free cash flow are forecasted for Microsoft. Before starting the analysis, observe that Microsoft allocates revenues on divisional level; however, the operational expenses are not allocated on a line-to-line basis to each division but on a total consolidated basis. For this reason, the expenses are analyzed on a consolidated basis for the whole company. And for the sake of presenting each division's potential effect on the overall profitability, the operating income are presented for each division with the assumption that the percentage of expenses allocated will remain equal to the allocation observed in 2011. This assumption may be somewhat inaccurate, as expenses often tend to vary slightly depending on a wide range of factors (e.g. importance of the division, number of new products developed). Nevertheless, this assumption is only for illustrative purposes and will not have any ramifications for the valuation.

#### *Revenue Forecast*

Microsoft's future revenues depend on their performance in five different divisions, namely Windows & Windows Live division, Server and Tools division, Online Services division, Microsoft Business division and Entertainment and Devices division. As the different divisions rely on different types of products and services, they will have different growth opportunities for the future.

#### Windows & Live division

This division is one of the largest divisions in Microsoft in terms of revenues. It offers products to corporate clients as well as private consumers. The main products include operating systems, Microsoft PC hardware and advertising services through Windows Live. Although the division offers multiple products, its overall importance is built on the success of its operating system Windows, which accounts for 75% of the revenues (Microsoft Corporation, 2011a). In this segment, Microsoft has market dominance and holds a market share in excess of 90% (Net Market Share, 2012). Competition in this segment is low at most, and Apple is second in line in terms of market share. Apple faces as a relatively low threat, as their operating system is designed for Macintosh computers, which account for a small share of the personal computer market. As most computers are supplied with operating systems when they are purchased, growth in this segment will be highly dependent on growth in the personal computer hardware market. As can be seen in Table 2, the computer hardware market has historically experienced a growth close to 5% on a nominal yoy basis. Furthermore, forecasts suggest that the global market for personal computers will grow at a nominal rate of 5.0% p.a.

**Computer Hardware Market**

| | Historical Annual Growth | | | | Forecasted CAGR |
|---|---|---|---|---|---|
| | 2008-2009 | 2009-2010 | 2010-2011 | CAGR | 2011-2016 |
| United States | 6.0% | 6.2% | 7.6% | 6.6% | 4.2% |
| Europe | -0.5% | 3.5% | 5.0% | 2.6% | 5.5% |
| Rest of the World | 0.6% | 8.3% | 7.2% | 5.3% | 5.6% |
| Global | 2.4% | 6.2% | 6.8% | 5.1% | 5.0% |

*Table 3: Computer Hardware Growth, nominal terms (MarketLine, 2012d, 2012e, 2012f)*

Considering Microsoft's dominating position in this segment and the forecasts for computer hardware suggests that Microsoft should be able to match the overall growth, assuming that they are able to maintain a strong market share. When adjusting for an expected inflation of 1.5% for advanced economies (IMF, 2012) for 2012 and 2013, a growth of 3.5% p.a. in real terms should be observed. The following period is expected to have a slightly higher inflation rate of 1.8% (IMF, 2012), leading to a potential growth rate of 3.2%. As previously mentioned, Microsoft serves a large part of the world's demand for computer software, which should suggest using an inflation rate that reflects global conditions to reach the real rate. However, the reason that justifies the use of an inflation rate for advanced economies is the fact that the majority of Microsoft earnings are generated in the United States, other Western markets and developed countries, which all can be classified as advanced economies.

It should, however, be noted that the release of new operating systems historically has led to stronger sales the release year due to a higher adoption rate from consumers that choose to upgrade, but also from consumers that buy new computers in order to acquire the new operating system. This suggests that a somewhat higher growth rate should be observed in 2012, when Windows 8 is due to be released (Bloomberg, 2012). When Windows 7 was released in 2009, the new operating system accounted for 23% of the total revenue growth for that year. Assuming that a similar release pattern can be discerned in 2012, a growth rate of 4.3% ($3.5\% + 3.5\% \cdot 0.23$) should be observed in 2012. Furthermore, popularity of tablets has increased over the recent years, which may affect both the release of Windows 8 and the overall sales of operating systems. Microsoft has prepared a release of the operating system compatible with tablets; however, it has not yet established a firm position in this market. The increased direct (from companies such as Apple and Google) and indirect competition will probably reduce future growth opportunities and a decline will hence be observed in the latter part of the forecasting period. The growth will reflect a slow decline to a long-term real growth rate of 1.8%, a growth rate that is slightly lower that the expected future growth rate of advanced economies (IMF, 2012). The growth rate is set lower because Microsoft is assumed not to have an as strong position in the new and wider operating system segment, which includes a larger range of products (e.g. tablets) aside from personal computers.

### Server and Tools division

This division is also amongst the largest divisions of Microsoft in terms of revenues, currently accounting for 24.5% of total revenues. Its products include specialized server software, cloud-based services, support and consulting services for information technology professionals. About 50% of the revenues stem from multi-

year licensing agreements, while retail sales and consulting services account for 30% and 20% respectively. In server segment, Microsoft faces fierce competition from numerous companies (e.g. Hewlett-Packard, IBM, Google, Amazon and open source), but has still managed to maintain a relatively high growth rate. The division has numerous years reported double-digit growth in the segment of server and tools. The growth in revenues was relatively low in 2009 and 2010, which could be the effects of the recent financial crisis. However, in the period 2009 to 2011, the division still reported a revenue growth of 7.9% yoy, which mainly can be attributed to increased adoption of Windows platform applications. The large number of competitors, the fierce competition and the high historical growth rates, points in the direction of lower opportunities of high growth rates for the future. When the market for server and associated services matures, the long-term growth for such products should be limited to the real growth in real GDP.

The above arguments advocate the use of a high organic growth rate in the initial part of the forecast, followed by a yoy decline in growth as the revenues from the segment for server and associated products converge to the economy-wide growth rate. The initial growth rate is set equal to the average yoy growth rate for 2009 to 2011 corrected for an average inflation of 1% for the period (IMF, 2012). For the following years the growth for is decreased slightly by 13.5% p.a. in order to reach a growth in the division of 1.9% for the final forecasted year. This yields a CAGR for the whole forecasting period of 4.3%, and considers that this segment of the software industry will reach its mature stage within the forecasting period.

### Online Services division

The Online Services division accounts for 3.5% of Microsoft's total revenues, and is hence the smallest division revenue-wise. Its portfolio of products includes MSN, Bing and various advertiser tools. Currently, the most important product is the search engine Bing, which generates revenues through offering online advertising. Historically, the division has reported positive as well as negative growth in revenues, and in general the growth rate has not been consistent. The most probable reason for this inconsistency is the aggressive competition among the three largest market players, namely Microsoft Bing, Yahoo! and Google. Google holds a well-established position in the market for search engines with its 66% market share, followed by Microsoft and Yahoo! with a market share of 14% and 16% respectively. However, as there are several other smaller search engines that offer the possibility to market third-party products or services (e.g. Ask.com, Timway), this segment of the industry faces intense competition. In 2011, Microsoft and Yahoo! initiated a partnership in order to improve their competitive position against Google. This partnership has lead to increased market shares for both companies as well as higher revenue growth.

The online advertising spending grew with approximately 23.0% from 2010 to 2011, while Microsoft had a revenue growth in this segment of 13.7%. This illustrates that even though Microsoft is one of the largest players in this market, it faces strong competition from both large and small firms that are able to capture a larger part of growth in the market. Table 4 summarizes the future prospects for advertising. The table includes the segment with importance for Microsoft, the online advertising, which is expected to have double-digit growth that slowly declines over the forecasting period.

**Advertising Spending Forecast by eMarketer**

| (in million $) | Forcasted Market Performance | | | | | |
|---|---|---|---|---|---|---|
| | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
| Print Ad Spending | | | | | | |
| Newspaper | 20,700 | 19,400 | 18,400 | 17,900 | 17,400 | 17,000 |
| Magazine | 15,300 | 15,400 | 15,300 | 15,300 | 15,200 | 15,300 |
| TV Ad Spending | 60,700 | 64,800 | 65,600 | 67,800 | 68,900 | 72,000 |
| *Online Ad Spending* | *32,000* | *39,500* | *46,500* | *52,800* | *57,500* | *62,000* |

| (in percent) | Forcasted Annual Growth | | | | | |
|---|---|---|---|---|---|---|
| | **2011-2012** | **2012-2013** | **2013-2014** | **2014-2015** | **2015-2016** | **CAGR** |
| Print Ad Spending | | | | | | |
| Newspaper | -6.3% | -5.2% | -2.7% | -2.8% | -2.3% | -3.9% |
| Magazine | 0.7% | -0.6% | 0.0% | -0.7% | 0.7% | 0.0% |
| TV Ad Spending | 6.8% | 1.2% | 3.4% | 1.6% | 4.5% | 3.5% |
| *Online Ad Spending* | *23.4%* | *17.7%* | *13.5%* | *8.9%* | *7.8%* | *14.1%* |

*Table 4: Advertising Spending Forecast (eMarketer, 2012)*

One would think that advertisers would seek to advertise through search engines that are able to capture the largest number of prospective buyers. Furthermore, one would also think that the market leader, that has the largest amount of viewers, is able to do this best. As of this reason, is reasonable to think that more advertisers will seek to do their services through the market leader, Google. With this assumption in mind, the prospective growth in real terms is set somewhat lower for Microsoft compared to the overall market for online advertising. Figure 24 illustrates the growth forecasted for Microsoft. The growth for the period 2011 to 2012 is set somewhat higher than for the prior period (13.7%), and then the growth will follow the forecasted growth in online advertising spending.

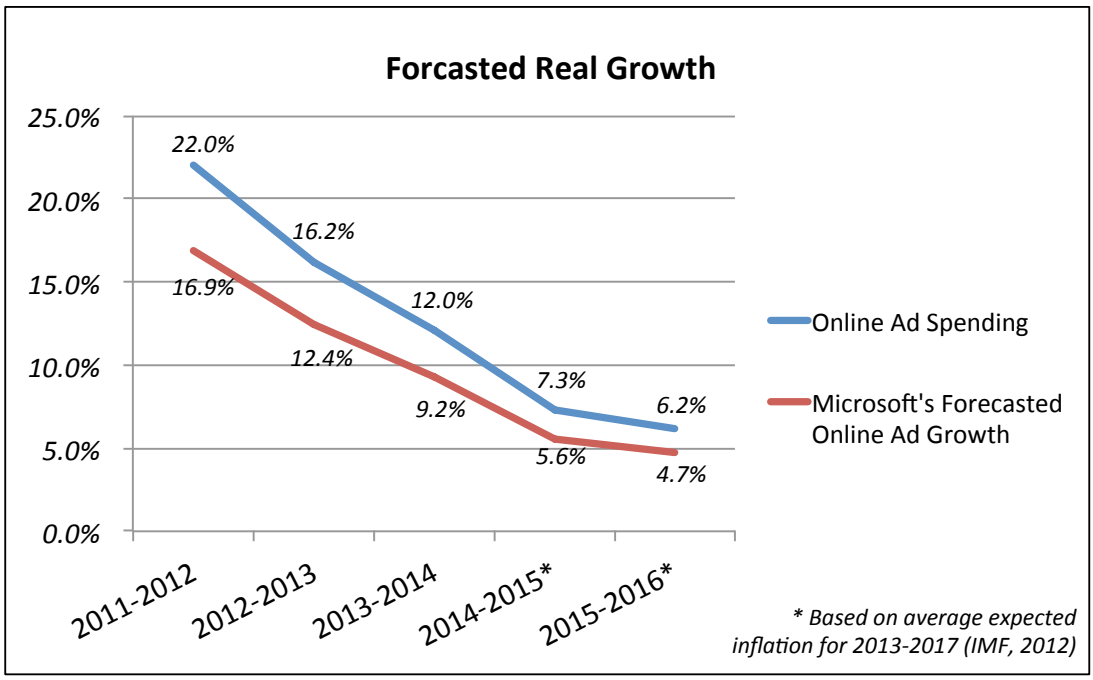



*Figure 24: Forecasted Real Growth for Online Ad Spending (eMarketer, 2012)*

The average decline in the online advertising spending over the whole period from 2011 to 2016 equals 26.7% p.a. However, as observed in the figure, the decline in growth is slowly decreasing and moving towards a stabilization of the market. After the initial forecast (up until 2016), it is assumed that the real growth for Microsoft will decline by 15.0% annually, which is the same decline in growth as for the last period in the initial forecast. With these assumptions Microsoft's growth reaches a growth of 2.0% for the final forecasting year.

### Microsoft Business division

The Microsoft Business division is the most important division for Microsoft, as it generates over 30% of the total revenues. Its product offerings include the widely popular Microsoft Office system and the Microsoft Dynamics business solutions. The future performance of the division will mainly rely on the adoption of current and future versions of the Microsoft Office system, as these products currently generates 90% of the division's revenues. In the first half of the last decade, the division enjoyed high single-digit or low double-digit growth, which increased the overall importance of the division (Microsoft Corporation, 2005; Microsoft Corporation, 2007). However, over the latter part of the last decade, Microsoft has faced increased competition from substitute office suit products, which has lead to lower growth rates (Microsoft Corporation, 2009; Microsoft Corporation, 2011a). Competitors include, but are not limited to, Apple, Google and OpenOffice (open-source community). Apple provides similar software package called iWork that is a direct substitute of Microsoft Office but at a lower price, while Google offers a free web-based office suit called Google Docs. OpenOffice is an alternative free office suit that is available for download on both consumer and enterprise level. These companies and communities have gained ground over the last few years, and face increasingly larger threat to Microsoft. Despite for the increased competition, Microsoft has been able to obtain low double-digit growth rate in years with new product launches (13.0-16.0%).

The future growth will, as mentioned earlier, rely on the rate of adoption of the current and future versions of the Office suit. The forecasted growth for computers are expected to grow at real rates of 3.5% and 3.2% for the periods 2012 to 2013 and 2014 to 2016, respectively (IMF, 2012; MarketLine, 2012d). In years without new product launches, this growth rate will reflect the largest growth rate that can be obtained, assuming that Microsoft does not improve its market share position. Considering the increased competition and the amount of freeware available, it is more likely that other companies will gain a larger market share at the expense of Microsoft's current share. This can, consequently, lead to lower potential growth rates for Microsoft. Additionally, it is important to consider that not all purchasers of computers are in need of an office suit, and may opt out on acquiring such a product or choose a freeware version, which in turn decrease potential growth rates in the segment for office suits. Based on these assumptions, the future growth for Microsoft in years without product launches is set to 30% of the total growth potential for this market, as displayed Table 5. For the total market it is assumed that after 2016 the potential growth will decline by 10% annually to reach a stable growth equal to the real GDP in 2021.

© Robert Stenmark

**Forecast for Office Suit Growth**

| (in percent) | Years Without Product Launch | | | | | | |
|---|---|---|---|---|---|---|---|
| | **2012-2013** | **2014-2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| Maximum Real Growth | 3.5% | 3.2% | 2.9% | 2.6% | 2.3% | 2.1% | 1.9% |
| Microsoft Growth Forecast | 1.1% | 1.0% | 0.9% | 0.8% | 0.7% | 0.6% | 0.6% |

| (in percent) | Years With Product Launch | | | |
|---|---|---|---|---|
| | **Historical Real Growth** | **2013** | **2016** | **2019** |
| Microsoft Growth Forecast | 11.5% - 14.5% | 13.0% | 7.8% | 4.7% |

*Table 5: Forecasted Real Growth for the Office Suit, Real Terms (IMF, 2012; MarketLine, 2012d; Microsoft 2005, 2007, 2009, 2011)*

The years with new product releases, Microsoft will have a higher growth rate compared to years when there are no new releases. This is based on the assumption that an increased number of consumers will choose to upgrade to the newest version of Office, and that historical growth points in the direction of higher revenues when new products are released. Furthermore, it is assumed that Microsoft will release a new version of its Office suit every third year, as this is consistent with the interval between the two last releases. The growth associated with the release in 2013 is assumed to be 13.0%, equal to the average growth of past releases. From then on, it is assumed that growth will decline with 40% between every release due to increased competition from substitute products.

### Entertainment and Devices division

In terms of revenues, this division is one of the divisions with less importance to Microsoft, and generates currently about 12.5% of the total revenues. However, the growth prospects for the software entertainment industry and the introduction of the Windows Phone in 2010 may turn this division into a future growth driver for Microsoft. Over the last few years, the growth in the division has been fairly small apart from the fiscal year 2011. This year alone produced a large uplift of 40% in revenues due to increased sales of Xbox and associated products. In the future, Microsoft is likely to closely follow the forecasted performance of the industry for gaming hardware; assuming that it is able to maintain its current market share. This assumption is a reasonable since the competition in this market is fairly stable (Nintendo and Sony), and all market participants have a well-established reputation. However, it should be noted that if any of the hardware manufacturers proves more successful than the others in release of the next generation console, the forecasted growth for Microsoft might be altered. Outlooks for Windows Phone is still ambivalent as it only has been a part of the division's product portfolio since late 2010, and the financials has not presented any clear trends for the product's direction. This can also change the prospective growth for the division.

© Robert Stenmark

**Entertainment Software Market Forecast by Gartner**

| (in million $) | Forcasted Market Performance | | | Forecasted Annual Growth | | |
|---|---|---|---|---|---|---|
| | 2011 | 2013 | 2015 | 2011-2013 | 2013-2015 | GAGR |
| Gaming Hardware | 17,797 | 24,621 | 27,354 | 17.6% | 5.4% | 11.3% |
| Gaming Software | 44,730 | 51,129 | 56,512 | 6.9% | 5.1% | 6.0% |
| Online Gaming | 11,899 | 21,453 | 28,298 | 34.3% | 14.9% | 24.2% |
| Total | 74,426 | 97,203 | 112,164 | 14.3% | 7.4% | 10.8% |

*Table 6: Entertainment Software Forecast, nominal terms (Gartner, 2011)*

With the presented information in mind, it is assumed that Microsoft is able to withstand the competition from the expected new generation console from Nintendo in 2012. During this year the division will have a real growth of 14.0%, which is somewhat lower than the expected 16.1% real growth of the gaming hardware market. The reason for the lower growth is that Microsoft is expected to launch its next generation console in 2013, and it is likely that demand for the current console will decline in 2012 in anticipation for the newer console. However, some of the decline will be offset by increased demand for the Windows Phone. The forecasts for Windows Phone are quite pessimistic across the whole forecast, with only one percent above the expected growth in the gaming hardware segment. This one percent real growth reflects Microsoft's strategy of expanding market share by increasing the market penetration of the Windows Phone. In 2013, the division's real growth is assumed to experience a modest uplift to 17.1% to reflect the growth of hardware market and 1.0% growth from the Window Phone. This higher growth will also reflect Microsoft's launch of the new console in the year-end holiday season. The following period the growth will continue to follow the industry with the additional Windows Phone growth, at a 4.8% real growth (3.8% + 1.0%), which will continue up until year 2017 and then slowly start to decline. The stabilizing growth until 2017 will be driven by the increased amount of consumer spending on entertainment, and the decline will start as a consequence of a saturating market with lower demand for the aging console. The decline will partly offset by revenues generated by the Windows Phone. In 2021, Microsoft will reach a real growth rate of 1.3%. This growth rate reflects the expected consumer expenditure growth when using the average of 2.3% for the period 1994 to 2013 as a proxy (IMF, 2012), and subtracting one percentage point due to the atypical growth in this period. The motivation for using such a long period to find the proxy for the growth is to neutralize some of the effects of the lower or negative growth experienced after the recent financial crisis.

### *Expense Forecast*

The expense forecast is performed on a consolidated level due to Microsoft's representation of the statement of financial income. The operational expenses are categorized as *Cost of Revenue*, *Research and Development*, *Sales and Marketing*, and *General and Administrative*. The individual expense categories differ in nature, and will hence having different impact on the bottom line for the core operations of Microsoft.

#### Cost of Revenue

Cost of revenue includes expenses that arise from manufacturing, distribution, efforts that drive higher revenues, as well as product support. Over the last three years

these expenses have represented between 19.8% and 22.3% of the total revenues. Examining older financial statements reveals that these costs have been somewhat lower percentage of the total revenues. The recent expense increase can be derived from the following three cost drivers (Microsoft Corporation, 2011a):

- Increased costs related to manufacturing to support sales volumes of Xbox consoles and Kinect sensors
- The royalty costs related to third-party suppliers have increased due to new digital features added to Xbox
- Increased consultancy services, with lower margins have influenced the cost base

Some of the expense increase is likely due to increased competition, and consequently larger efforts are necessary to attract consumers. For the forecast, a continuation of the trend of high cost-to-revenues should be observed. In 2012 the cost of revenue is expected to account for 21.0% of the total revenues, which is equal to the average of the last three years. The following year Microsoft is expected to release its next generation console, and similar to other release years, cost of revenues should increase. In 2005, Microsoft experienced an increase of $1,600 million in cost of revenues associated with the launch of the Xbox 360. The new console is not expected to introduce revolutionary new hardware and the demand is expected to be lower than on past consoles (Karimzad, Grant, & Fassler, 2012), for this reason a somewhat lower increase in costs associated with the launch is assumed. The forecast for the launch year and the following year (2013 and 2014), assumes that the cost of revenues will account for 23.1% of the total revenues. After these initial years, it is assumed that production and manufacturing costs will fall slowly back to an average of 21.0% of total revenues and remain constant for the distant future. The decline will mainly be a result of more efficient production of its products and a stabilization of costs associated with product support.

### Research and Development Expenses

The research and development expenses are related to internal as well as third-party work related to product development and programming costs. Historically, the R&D spending has been varying slightly, both in terms of absolute value and in terms of percent of total revenues. For this reason, it is difficult to discern any clear trend. What *can* be observed is a trend of lower R&D spending over the last 10 years in terms of total revenues, decreasing from 20.1% (Microsoft Corporation, 2002) to 12.9% (Microsoft Corporation, 2011a). As the R&D spending have experienced both upswings and declines over this longer period, it is assumed that Microsoft's expenses in this category is equal to the average of the last three years (14.1% of total revenues) up until the end of 2016. After the initial forecast, it is assumed that the R&D expenses, in terms of total revenues, will drop to the industry median. The assessment of the industry median rate is based on the closest direct competitors of Microsoft, identified in their most recent annual report (Microsoft Corporation, 2011a). These are companies that should be expected to have fairly similar R&D expenses because they provide similar software products, which demand considerable investments in research and development. When analyzing the identified competitors, their levels of R&D spending seem to coincide. It can also be observed that, in most cases, the median expenses exceed the average expenses due to some outliers in the data (see Table 7). This yields a negatively skewed distribution for the industry R&D expenses,

and would suggest that the median expenses should be able to better reflection of the actual R&D expenses. The result of this assessment is an industry median of 12.0% in terms of total revenues (Table 7), which is the forecast applied from 2016 to 2021.

**Industry R&D Costs for Direct Competitiors of Microsoft**

(in percentage of total revenues)

| | |
|---|---|
| *Windows and Windows Live Division* | |
| Average | 10.7% |
| Median | 12.8% |
| *Servers and Tools Division* | |
| Average | 12.7% |
| Median | 12.7% |
| *Online Services Division* | |
| Average | 14.9% |
| Median | 14.9% |
| *Microsoft Business Division* | |
| Average | 11.5% |
| Median | 12.8% |
| *Entertainment and Devices Division* | |
| Average | 6.6% |
| Median | 5.9% |

| Industry Research and Development Costs* | | | | |
|---|---|---|---|---|
| | 2009 | 2010 | 2011 | Average |
| Average R&D | 11.1% | 11.1% | 10.9% | 11.0% |
| Median R&D | 12.0% | 12.0% | 11.8% | 12.0% |

** Calculated based on the proportion of the operating segments' revenues to total revenues*

*Table 7: Industry R&D Costs, Based on Competitors' Annual Reports*

For the extensive list of all the competitors recognized by Microsoft and their R&D spending in relation to total revenues, see Appendix 12. The appendix also outlines how the average and median industry R&D costs are calculated for Microsoft's diversified software business.

### Sales and Marketing Expenses

Historically, the sales and marketing expenses have been accounting for the largest proportion of total costs. In terms of total revenues, these expenses have been close to 20.0%. Faced with fierce competition and numerous substitute products, marketing is essential for Microsoft to retain existing customers and to attract new customers. Over the last few years, this type of expenses has slowly declined to 19.9% of total revenues. Microsoft are due to release their new operating system Windows 8 in 2012, and an expected launch of the next generation gaming console is set for 2013. Under these circumstances, it is assumed that Microsoft will increase its marketing efforts to attract consumers to buy their products. For this reason, the forecasts for the sales and marketing expenses assumes an increase in 2012 and 2013, accounting for 20.4% and 21.0% of total revenues, respectively. After these two years, it is assumed that the expenses gradually will fall to 20.0% of total revenues.

© Robert Stenmark

### General and Administrative Expenses

These expenses arise from in-house services associated with facilities, finance, legal, HR and administration. These expenses are likely to display a high degree of correlation with revenues, as the company will have to perform more administrative procedures when demand increases. Analyzing older financial statements, this type of expenses has been as high as 14.0% of total revenues. Up until to day, these costs have been trending to lower levels of total revenues. The last three years has seen costs that are 6.5% of the total revenues, on average. As Microsoft has not directly expressed any intensions of expanding beyond what they have historically have done, it is assumed that the general and administrative expenses will stay constant at the average of expenses to total revenues of 6.5% (2009-2011).

### *Tax on EBITA*

The tax rate that will be applied to the EBITA to find the first expression of the free cash flow formula is assumed to be equal to Microsoft's statutory tax rate adjusted for foreign income, 19.4%, i.e. a blended global tax rate. Assuming a constant tax rate for the future also explicitly assumes that the statutory tax rate, the tax of foreign earnings and the proportion of revenues from each geographic region will remain the same in the future.

### *Capital Expenditures*

The capital expenditures reflect investments that are carried out in order to provide future benefits for the company. For Microsoft these expenditures mainly comprise investments in property and equipment. Moreover, due to the nature of their operational activities, intangible assets are also included as capital expenditures. Microsoft regularly acquires intangible assets, which provide the company with future benefits. The most important, and largest, investments in property and equipment are buildings for operational purposes and computer equipment (Microsoft Corporation, 2011a). In order to remain competitive and stay on top of technological developments it is essential that they possess up-to-date computer equipment and have the proper facilities to perform their day-to-day operational activities. To do this, continued capital expenditures are required.

The investments in property and equipment for the years 2009, 2010 and 2011 have been $3,119 millions, $1,977 millions and $2,355 millions, respectively (Microsoft Corporation, 2011a). Only analyzing these years reveals little consistent direction of the capital expenditures. However, looking at older annual reports reveals that the investments in property and equipment, generally, has been in the range of $2,200-$3,100 million. This should suggest that future expenditures should be approximately in this range in the future as well. Analyzing the capital expenditures in terms of the account balance of the Property and Equipment the prior year can provide useful information to build a potential forecast. Figure 25 reveals that the capital expenditures were relatively high in 2009 and more stable in the two following years.

© Robert Stenmark

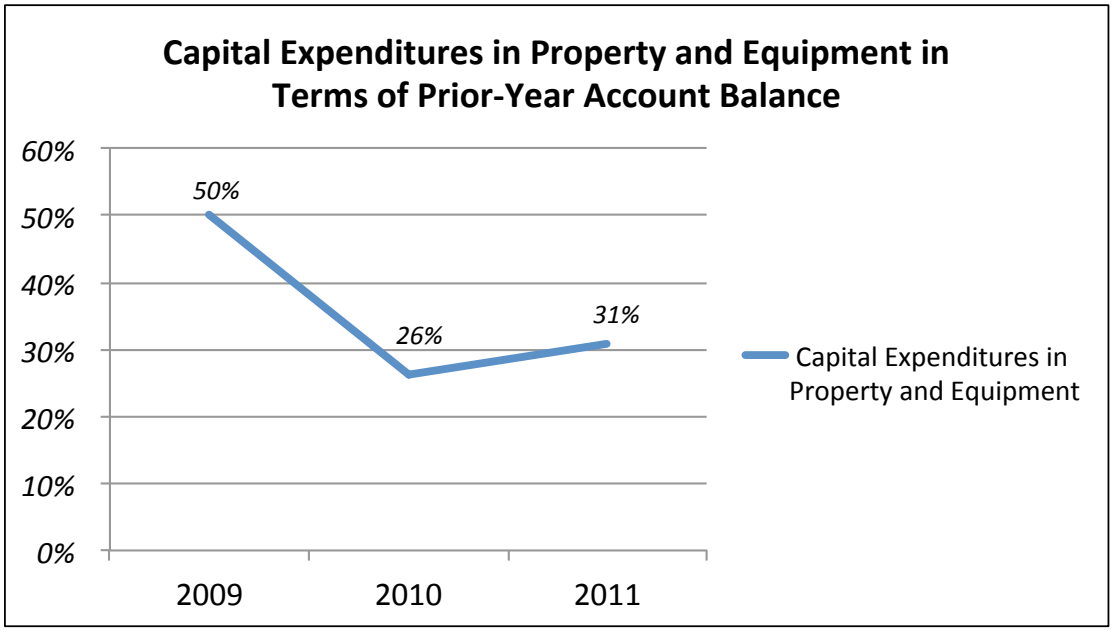



*Figure 25: Tangible Capital Expenditures in Terms of Prior Year Account Balance (Microsoft, 2011a)*

However, one would think that analyzing them in relation to total revenues would provide a better reflection of the capital expenditures. The reason for this is that years with higher revenues should be more likely to have larger capital expenditures in anticipation for similar demand the next year, and vice versa. Forecasting in terms of the prior year account balance would not be able to capture this effect directly. Figure 26 displays the capital expenditures in relation to the total revenues for each of the last three years.

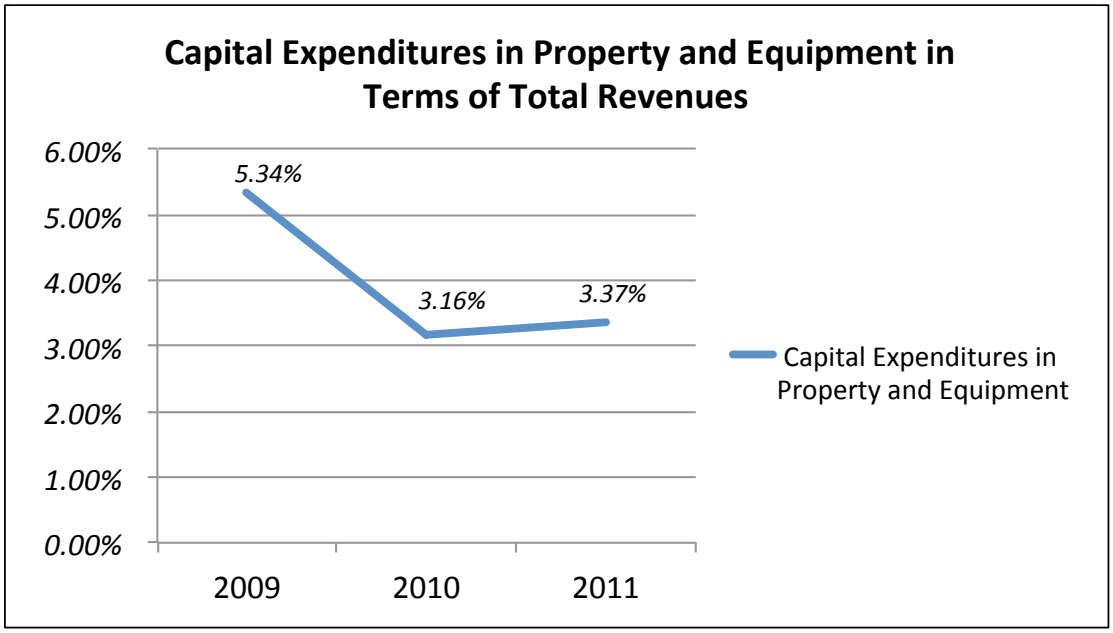



*Figure 26: Tangible Capital Expenditures in Terms of Total Revenues (Microsoft, 2011a)*

The years 2010 and 2011 seem to reflect a consistent pattern in relation to capital expenditures. In order to take into account years with potential higher expenditures, forecasting is based on a constant rate of 3.5% of current year's revenues. This percentage is somewhat smaller than for the average of the last three years, 3.96%.

© Robert Stenmark

The last capital expenditures that will be considered are related to the intangible assets and goodwill. First, the intangible assets, applies the same rationale used to calculate the future capital expenditures in property and equipment. However, the constant rate is set equal to the average of the last three years, as these expenditures appear to be more consistent. Hence, the future capital expenditures in intangible assets are 0.5% of the total revenues. Second, the goodwill is assumed to remain constant over the forecast, besides an increase in 2012. The account increase of $7,117 million in 2012 is associated with the purchase of the Skype Global S.á r.l.

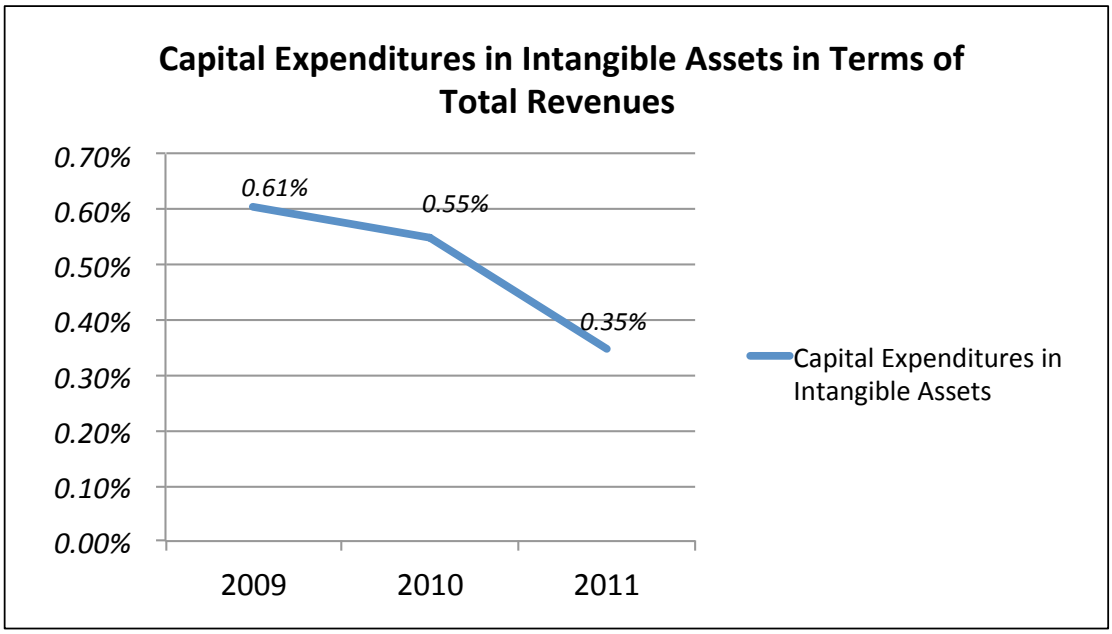



*Figure 27: Intangible Capital Expenditures in Terms of Total Revenues (Microsoft, 2011a)*

As investments in the long term tend to stabilize at a level that preserves the assets that provide future benefits to the company, the capital expenditures will fall to a level that neutralizes the effect of depreciation or amortization in the final year of forecast.

### *Depreciation and Amortization*

Forecasted depreciation and amortization is expected to assume values that are similar to historical levels. On one hand, the depreciation of tangible assets over the last three years has varied between 23.9% and 27.2% of prior-year balance of the property and equipment account. Applying a proxy of 25.7% to the historical data yields the estimated depreciation with the lowest total error compared to actual depreciation. For this reason, a rate of 25.7% is applied to the forecasting of depreciation. On the other hand, amortization of intangible assets has historically had somewhat larger percentages of 25.5% to 33.7%, in terms of prior-year balance of the intangible asset account. When applying the same framework as used for depreciation, the rate that yields the lowest estimation error based on historical amortization is 29.9%. This rate is held constant throughout the forecast to estimate the future amortization.

### *Dividends*

Microsoft has not announced any targets for the future payout ratio of its dividend. The payout ratio for the last three years has declined from 31.9% to 23.5%

of net income. If the financial performance of Microsoft continues, it would be likely to observe future dividends with the same payout ratio as in 2011. However, Microsoft currently has a retained deficit, as opposed to retained earnings, that stems from a special dividend and a share repurchase that was performed in 2005. This retained deficit has been trending towards reduced levels, and Microsoft is expected to restore positive levels to this account in 2012. For this reason, it is likely that Microsoft will have a somewhat higher future payout ratio than declared for 2011, to grant its shareholders with a larger share in the company's financial performance. As a proxy for the future payout ratio, an average of the last three years of 26.6% is applied to the net income. This payout ratio will still enable growth in retained earnings, and will provide Microsoft with increased financial flexibility that may be advantageous in the industry's increasingly competitive environment.

### *Net Operating Working Capital*

The last component of the free cash flow formula is the net working capital, which is a measure of the company's ability to manage its current liabilities. In other words, a company should optimally have short-term assets that are able to fund its short-term liabilities (positive working capital), and hence relieve the company of its obligations if necessary. However, if levels of inventory and accounts receivables are low, a negative working capital can be indicative of operational efficiency. To calculate the net operating working capital for Microsoft the following formula has been applied.

$$NWC = Current\ Operating\ Assets\ excluding\ Cash - Current\ Operating\ Liabilities$$

When applying this formula, it is important to emphasize that only operating assets/liabilities should be included in the calculation, i.e. items that concerns the core operations of the company. In Microsoft's situation, this means that operating assets will encompass Accounts Receivable, Inventories and Other Current Assets, while operating liabilities will include Accounts Payable, Accrued Compensation and Short-Term Unearned Revenue. These items will now be discussed to form the basis for the forecast of the net working capital.

On the asset side, the first item is the Accounts Receivable, which is forecasted based on an annual percentage of 20.5% of total revenues. Over the last three years, the accounts receivable has moved within a tight band around 20% of total revenues, but increasing slightly in the last fiscal year. It is unlikely that the percentage will continue to increase in the long term, and it is hence assumed that the receivables will stabilize in terms of total revenues. The applied percentage of 20.5% represents the average for the last three years, and is consistent with historical values of the accounts receivables. Second, inventories are likely to correlate with the amount of cost of revenues. Over the last three-year period inventories have increased in these terms, from 5.9% to 8.8%. These findings do not point in the direction of any clear trend. However, examining older data reveals that the inventories have been quite low after the financial crisis and are increasing to more normal level (see Figure 28). Moreover, it should be expected that Microsoft will increase their proportion of online delivery of products over time, and inventory should decline accordingly. For this reason, a more complete forecast of the inventories is based on the average of the last five years of 7.9% of the cost of revenues.

© Robert Stenmark 

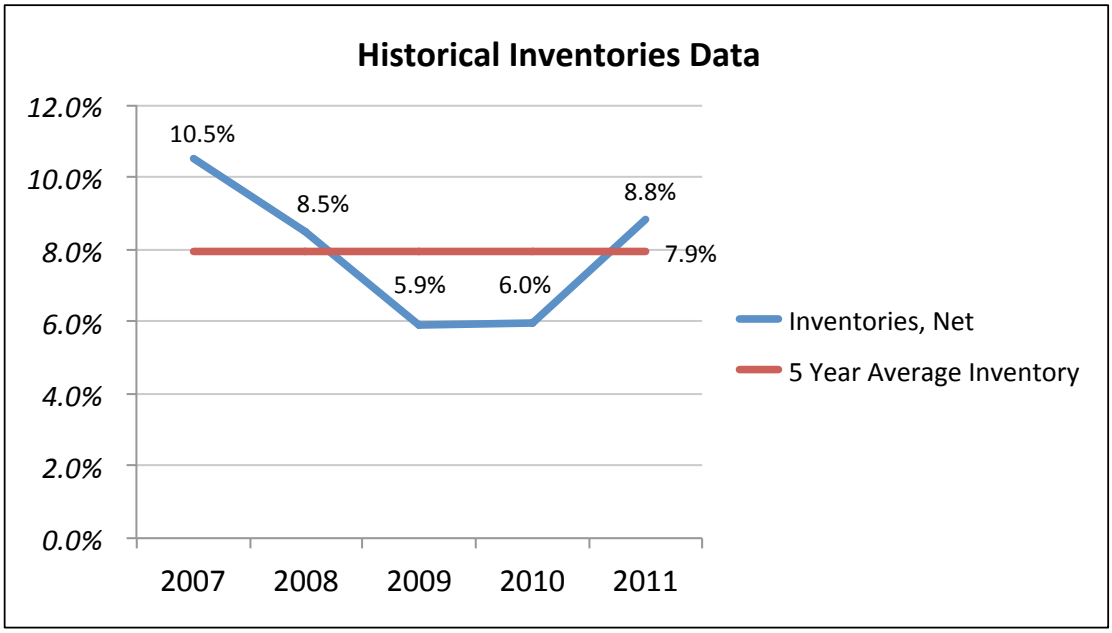



*Figure 28: Historical Inventories Data, Inventories in Terms of Cost of Revenue (Microsoft, 2011a)*

Third, it is not made explicit what the account Other Current Assets include, for this reason it is hard to make any direct assumptions about what values this account may take on in the future. Consequently, it is assumed that this account will remain constant for the distant future at levels reported in the last quarterly earnings announcement, $2,608 millions (Microsoft Corporation, 2012h).

On the liabilities side, the first item is the Accounts Payable. As suggested by Koller, Goedhart, & Wessels (2010), the accounts payable are forecasted in percentage terms of cost of revenue. Since the account has been slightly volatile in these terms (26.9% to 32.5%), a historical three-year average of 28.9% is applied throughout the forecasting period. Second, the Accrued Compensation's most rational forecasting ratio is based on total revenues, as the generation of higher revenues are motivated by employee compensations. Over the last three years, the account has slowly converged towards 5.0% of total revenues, decreasing from 5.4% to 5.1% (Microsoft Corporation, 2011a). Its reduction has been 2.7% annually, and it is reasonable to assume that a similar trend will be observed for the long-term future. The reasoning behind this line of thought is that *some* of the revenues will tend to be somewhat self-generating after some time due to past efforts by employees. Consequently, the compensation in terms of total revenues is likely to decline. In order to not cause demotivation amongst the employees, the annual reduction in compensation is set to 2.3%. It is noteworthy to mention that accrued compensation will decrease in percentage terms, but not in absolute terms, due to higher revenues. Third, the Short-Term Unearned Revenue will, similar to Accrued Compensation, correlate highly with current revenues. The average account balance the last three years has been 22.2% of total revenues. In estimating the net working capital it is assumed that the future levels of these revenues are somewhat lower at 21.5%, since the account currently (2011) is at historical high levels both in terms of percent of total revenues and in absolute terms.

An analysis of the working capital for the last three years reveals that Microsoft has a negative net working capital, i.e. it is unable to fund its short-term liabilities using solely short-term assets. With continuation of this trend, and the above assumptions about the items included in the formula's calculations, the negative net working capital will persist.

### *Financial Leverage*

As stated earlier, the financial leverage of the company is assumed to converge to the industry average. The change in financial leverage will not affect any of the variables outlined above, but will affect the ultimate value of the company through the discount rate. For Microsoft, the industry average debt-to-equity ratio is 7.5% (Damodaran, 2012a). This debt ratio is considerably lower than Microsoft's current ratio of 20.88%. The reason for the high current debt-ratio is that Microsoft has "taken advantage of the favorable pricing and liquidity in the debt market, reflecting [their] superior credit rating and the low interest rate environment" (Microsoft Corporation, 2011a, p. 31). Moreover, it is likely that it will return to lower levels of debt in the future, when the economic situation stabilizes. Consistent with these arguments, it is assumed that Microsoft slowly will decrease its debt ratio to the industry average over the course of the next five years.

### *Cost of Capital*

Having forecasted all the essential components of the free cash flow, what remains to finalize the valuation is the calculation of the cost of capital for Microsoft. The cost of capital is applied to the future free cash flows in order to discount them back to current levels and consequently find the enterprise value of the company. As outlined in the literature review, the cost of capital in the Free Cash Flow to Firm model is represented by the weighted-average cost of capital, while the cost of capital in the Adjusted Present Value model is represented by the unlevered cost of equity. Both these measures of cost of capital are based on the CAPM model. For this reason, assumptions about the CAPM's components will be outlined below, followed by the estimation of the WACC, which also includes the cost of debt.

All of the components of the CAPM model are of equal importance, and if any one of them were to be based on data that does not necessarily reflect the reality, the ultimate enterprise value may result in being unsound.

$$E(r_E) = r_f + \beta_L(E(r_m) - r_f)$$

The first component of the CAPM model is the risk free rate, which should be set equal to the rate of return a long-term government bond with ten years duration and that carries no risk. The recent turmoil in the financial markets has resulted in rate of returns on bonds with long duration to drop to historical low levels. Consequently, most economies are going through an era with risk free rates that have never before been observed, nor are reflective of rates that are expected for the future. For this reason, it is assumed that using the average of past bond rates from 2007 to 2012 will provide a more reliable estimate of the risk free interest rate. Microsoft operations are mainly located in the United States, and majority of its investors have their origins in this geographic region. This suggests using an American risk free rate of return based on U.S. Treasury bonds. Based on the average of the 10-year Treasury bond from 2007 to 2012 yields a proxy for the risk free rate of 3.42% (U.S. Department of the Treasury, 2012).

The second component necessary to calculate the cost of equity is the relevant company beta, which will measure the systematic risk of Microsoft. As discussed in the literature review, there are two kinds of betas, one unlevered beta and one levered

beta for each company. As the levered beta is based on the value of the unlevered beta, the latter will be discussed first. Damodaran identifies an unlevered beta of 1.18, corrected for cash, for the computer software sector (Damodaran, 2012a). The reason why the beta is corrected for cash is because cash often is assumed to have beta equal to zero, or close to zero, i.e. high cash holdings will lower the unlevered beta. In other words, this means that *exclusion* of the cash holdings in the calculation of the unlevered beta for the industry provides a beta that is more reflective of the actual riskiness of the assets that are specific to the particular industry. Furthermore, converting the unlevered beta using the target industry debt-to-equity ratio yields a levered beta equal to 1.24 for Microsoft.

The third and final component required to find the unlevered cost of equity and the levered cost of equity is the market risk premium. According to Credit Suisse's (2012) the most recent version of their Investment Returns Yearbook, the historical risk premium for the United States is 5.20%. As the American equity market is one of the most mature markets in the world, and the fact that the analysis by Credit Suisse is based on over one hundred years of data, this risk premium is a reliable estimate of the true risk premium.

Using the obtained information to find the unlevered and the levered cost of equity yields rates of 9.57% and 9.95% respectively. The unlevered cost of equity is applied directly to the valuation using the APV approach, while the levered cost of equity fits into a wider context. In order for the levered cost of equity to prove its usefulness it has to be included in the WACC. Before the WACC can properly calculated, an assessment of the cost of debt is required. Damodaran (2012b) provides an easy framework for assessing the cost of capital based on the creditworthiness of the company. As outlined in the literature review, this framework calculates the cost of debt by using the risk free rate and adding a default spread reflecting the credit rating of the company. Microsoft currently has a credit rating of AAA that suggests a default spread of 0.65% over the risk free rate, and results in a cost of debt of 4.07% using the risk free rate identified earlier. However, it should be kept in mind that most of the debt outstanding is issued quite recently (Microsoft Corporation, 2011a), while the assumption for risk free rate is an average from 2007-2012. Rationally, since these data are not fully consistent they will provide a cost of debt higher than the true cost of debt. An analysis of Microsoft's most recent annual report reveals record of the effective interest rates that are to be paid on outstanding debt. Calculating a weighted-average on the total debt outstanding yields a cost of debt of 3.16%, which is considerably lower than the results using Damodaran's framework. This new rate yields a more appropriate cost of debt, and is more suited with the assumption that Microsoft is expected to reduce its future debt levels.

$$r_{WACC} = \frac{E}{E+D} \cdot r_E + \frac{D}{E+D} \cdot r_D \cdot (1 - T_C)$$

It would now be tempting to use the U.S. marginal tax rate of 35% (IRS, 2012) to find the cost of capital. However, for the valuation to be consistent the marginal tax rate used in the free cash flow needs to be applied (Koller, Goedhart, & Wessels, 2010). In Microsoft's case, this tax rate is represented by the blended global tax rate of 19.4%. All the essential components required to calculate the WACC are now in place. Applying the target rate for debt-to-equity yields a cost of capital (WACC) of 9.43%. The assumed rates, ratios and betas are summarized in Table 8.

| Valuation Parameters For MSFT | |
|---|---|
| Risk-free Interest Rate (US Treasury 10y) | 3.42% |
| Risk-Premium US | 5.20% |
| U.S. Marginal Tax Rate | 19.40% |
| Target D/E (Industry) | 7.49% |
| Target D/(D+E) | 6.97% |
| Cost of Debt | 3.16% |
| Unlevered Beta | 1.18 |
| Unlevered Rate of Return, Equity | 9.57% |
| Microsoft Levered Beta | 1.25 |
| Levered Rate of Return, Equity | 9.95% |
| WACC | 9.43% |
| Long-Term Sustainable Growth Rate | 1.90% |

*Table 8: Valuation Parameters for Microsoft*

Finally, applying the identified valuation parameters to the forecasted free cash flows and assuming a long-term sustainable growth rate of 1.9% (equal to the average forecasted real growth in advanced economies 2011-2017 (IMF, 2012)) for the terminal value, yields an enterprise value for Microsoft of $344.6 billions (Appendix 14). When accounting for net debt (adjusted for off-balance-sheet items such as operating leases) the value of pure equity is $340.3 billion, or $40.09 per stock. Compared to total market capitalization of $237.4 billion in 2011, the theoretical value seems excessively high. However, there should be noted that Microsoft are experiencing increasing competition from several sources and that investors have lost some of the confidence in the company's expected future performance. For this reason, it is reasonable to believe that the future outlooks for the company have lead to an underpricing.

Furthermore, this valuation assumes that Microsoft will not perform any stock repurchases or stock issues in the future. This is not necessarily a realistic assumption, as the company had still has an option outstanding to repurchase stocks for $12.2 billion. However, this will not have a major impact on the valuation, as stock repurchases is a balanced process. This means that when stocks are repurchased, the balance of cash is reduced while the number of shares outstanding is also reduced, and it should for this reason yield only a minor impact on the value of the company. Nevertheless, it should be noted that the impact on the valuation would be highly dependent on the stock price at time of repurchase and the future value of the stock price, i.e. if the stocks are bought back at a premium or a discount.

### *Tax Shields and Costs of Financial Distress*

In order to perform a valuation using the APV framework, it is necessary to split the valuation into three (or more) components. The following valuation is focusing on the unlevered value of the company, the value of any tax shields, and the probable bankruptcy costs.

In order to perform a proper assessment of the value, each of the components needs to be discounted with a rate that reflects their overall riskiness. The discounted values are then summarized, to find the value of the company. Many practitioners prefer this valuation method because provides better insights on where value is created. However, as mentioned in the literature review, estimating a reliable value for the cost of bankruptcy may prove to be difficult.

The first component of the model is the unlevered value, i.e. the value of the company as if it was financed entirely with equity. This means that the free cash flows can be discounted by the unlevered cost of equity, which was calculated earlier. The value of Microsoft, assuming no debt, is equal to $341.1 billion.

The second component is the tax benefits that the company is granted because it holds debt. The calculations of the tax benefits follow much of the same logic as with the unlevered value of the company. Basically, the calculation involves estimating the annual tax deductions that the company are provided with, and discount them back to the present. Since the discount rate should be reflective of the riskiness of the given component, the benefits provided by the reduced tax should be discounted at the cost of debt. With this in mind, and explicit assumptions regarding debt, yields a value for Microsoft's tax shields of $7.9 billion using formula below.

$$Present\ Value\ of\ Tax\ Shields = \sum_{t=1}^{t=n} \frac{T_C \cdot r_D \cdot D_t}{(1+r_D)^t} + \frac{\left(\frac{T_C \cdot r_D \cdot D_t}{r_D - g_n}\right)}{(1+r_D)^n}$$

The last, and most intricate, component is the present value of the probable bankruptcy costs. Formula-wise they are easily calculated as the company's probability of default multiplied by the present value of the bankruptcy costs. However, finding estimates for these variables prove to be more difficult. Usually the probability of default can be found by analyzing historical defaults rates based on credit ratings (Damodaran, 2006). However, the number of companies that have entered a state of financial distress have drastically increased during and after the financial crisis. Under these conditions, it may be argued that using a probability of default based on historical data is unfeasible. For this reason, the *implied* probability of default has been calculated based on the current prices of Microsoft's bonds. The formula applied to achieve this, is expressed as follows ($\pi_a$ – probability of default) (Damodaran, 2006, p. 20).

$$Bond\ Price = \sum_{t=1}^{t=n} \frac{Coupon \cdot (1-\pi_a)^t}{(1-r_f)^t} + \frac{Face\ Value\ of\ Bond \cdot (1-\pi_a)^t}{(1-r_f)^n}$$

It should be noted that calculating the implied probably was not as straightforward as it may seem. Many of the calculations using the current price of Microsoft's bonds yielded negative probabilities of default, which in fact should not be possible. Based on this discovery it can be argued that the bond prices are too high to reflect their respective future earnings, i.e. they are overpriced. The most likely reason for this is the increased demand for these financial instruments, or in other words, the investors' flight-to-quality. Moreover, as negative estimates of the probability of default are unfeasible to include in the calculation of a reliable proxy,

only the positive estimates have been included. The remaining estimates after this elimination yielded an average probability of default of 1.16% (see Table 9).

**Implied Probability of Default - MSFT**

| Bond Name | Maturity | Implied Probability of Default |
|---|---|---|
| Microsoft 4.2% | 7 years | 0.13% |
| Microsoft 3.0% | 8 years | 2.18% |
| Average Implied Probability | | 1.16% |

*Table 9: Implied Probability of Default for Microsoft*

Furthermore, the bankruptcy costs associated with a potential distress situation was set equal to the same as for the electric equipment industry, as no suitable rate was found for the software industry. The electric equipment industry has bankruptcy costs amounting to 113.8% of the unlevered value of the company, which is assumed to be very similar to the software industry. The reasoning for this is that the costs associated with distress in software companies are for various reasons also likely to be very large. The substantial size of these costs are likely originate from the likelihood of losing many loyal customers if entering a stage of financial distress; the large amounts of intangible assets that are not easily converted to hard cash; and the high expected legal fees associated with bankruptcy. Acknowledging that this rate is a reliable estimate for the actual bankruptcy costs, the probable bankruptcy costs for Microsoft can be estimated at $4.5 billion, based on the estimated unlevered value.

As all the components of the APV have estimated, the enterprise value can be retrieved by adding the unlevered value and the tax benefits created by debt and subtracting the cost of bankruptcy. This yields an enterprise value of $344.5 billion for Microsoft, which is $99 million below the value obtained using the WACC. This slight difference can be argued to be directly attributable to the intricate process of estimating a reliable estimate for the probability of default.

### *Sensitivity Analysis*

Over the past ten years, there have been a constant flow of new developments from the software industry, and the technological advances have been immense. As a result of this, the future may prove to be very different than initially expected, which will have an impact on the valuation. A resolution to this issue would be to perform a sensitivity analysis by altering some of the important variables in the valuation. The analysis will provide a more complete understanding of what affects the value, and offers a way to reflect on the explicit assumptions for the future.

In performing the sensitivity analysis for Microsoft, some of the valuation's most important variables have been altered to examine their overall impact on value. The different alterations are presented with their effect on the equity value, i.e. adjusted for net debt of $4,263 million, and compared to the base case of Microsoft. When presented in equity terms, it reflects how the stock price is likely to change. Moreover, it is important to emphasize that the analysis only takes into account the *isolated* effect of changes in the relevant variables. For this reason, the effects that are presented below are not representative if the changes were to happen simultaneously.

The first variable assessed in the analysis is the terminal growth rate, which will have the biggest impact on Microsoft's valuation. The analysis shows that if Microsoft were to capture a higher growth than in the base case, it can add value

exponentially, i.e. the higher growth rate, the more it adds to the overall equity value (see Table 10).

**Microsoft's Sensitivity to Terminal Growth Rate**

| | Terminal Growth Rate | | | | |
|---|---|---|---|---|---|
| | **0.90%** | **1.40%** | **Base Case** | **2.40%** | **2.90%** |
| Change in Equity Value | -22,929 | -12,180 | - | 13,916 | 29,968 |
| Change in Value per Share | -2.70 | -1.43 | - | 1.64 | 3.53 |
| Percentage Change | -6.7% | -3.6% | - | 4.1% | 8.8% |

*Table 10: Microsoft's Sensitivity to Terminal Growth Rate*

The second variable that has been assessed is the level of debt. Even though it is assumed that it is unfeasible for Microsoft to issue more debt, it is interesting to inspect its effect on the equity value. Table 11 illustrates that the value-added by debt is linear, i.e. every 2.5 percentage point increase in the debt-to-equity ratio increases the value of equity a slight 0.7%. The results verify that it is unfeasible for Microsoft to issue more debt, for the reason that it is likely to cause more harm than good.

**Microsoft's Sensitivity to Increased Amounts of Debt**

| | Target Debt Ratio | | | | |
|---|---|---|---|---|---|
| | **5.00%** | **Base Case** | **10.00%** | **12.50%** | **15.00%** |
| New WACC | 9.46% | - | 9.37% | 9.33% | 9.29% |
| Change in Equity Value | -2,473 | - | 2,421 | 4,766 | 7,046 |
| Percentage Change | -0.7% | - | 0.7% | 1.4% | 2.1% |

*Table 11: Microsoft's Sensitivity to Increased Amounts of Debt*

The last variables that have been assessed are concerned with variables of a more operating nature. As Figure 29 illustrates, a change of only a percentage point can make significant impact on the equity value of Microsoft. Implicitly, this means that if any of the specified variables experiences an unexpected change, the value for Microsoft may prove to be very different than the estimated theoretical value.

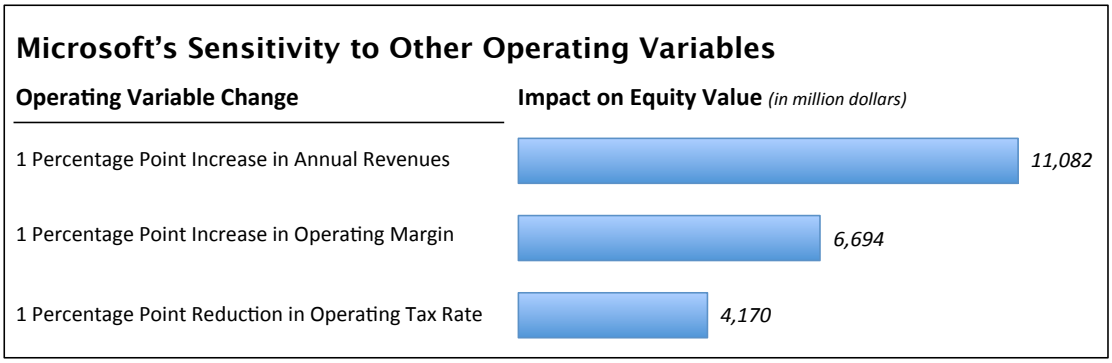



*Figure 29: Microsoft's Sensitivity to Other Operating Variables*

### 6.1.2 Activision Blizzard, Inc.

This section discusses the forecasted inputs of the free cash flow, the target debt ratio and the cost of capital to enable a valuation of Activision Blizzard. It should be noted the company's financial information prior to 2008 is incomparable with the newer financial information due to Activision's recent merger with Blizzard. Furthermore, Activision Blizzard presents their public financial information in multiple ways, i.e. segmented information, in order to provide some perspective on the company's financial performance. The segmentation structure opted for, to forecast the revenues, is presented on a platform-basis. Moreover, since Activision Blizzard has not segmented their costs in similar fashion, it does not allow for a visualization of the future costs that are in line with the revenue forecast. For this reason, the costs are presented in a consolidated fashion that that does not reveal each respective segments actual expense.

#### *Revenue Forecast*

The forecasting approach for the revenues follow same line of thought as the historical- and forecasted performance outlined in the industry analysis, distinguishing between revenues from *Online Subscriptions*, *High Definition Platforms*, *Casual Platforms*, *PC and Other*, and *Distribution*. Allocation of revenues in this fashion allows for a clear presentation of trends in each of Activision Blizzard's operating segments. The forecast for total revenues will be in line with expected future trends for gaming software provided by Gartner, Inc. (2011), earlier depicted in Table 6. With this in mind, it should be noted that Activision Blizzard might acquire higher growth rates at the expense of other companies if they continue to release successful game titles.

Moreover, in the long term, much of the growth in revenues is likely to converge to the future growth in private consumer expenditure. As with Microsoft, this is assumed to be equal to 1.3%, which is the average growth in consumer expenditure during 1994-2013 (IMF, 2012) adjusted down by a percentage point for the historically high level of growth during this period. The reason why the future private expenditure is applied is that future spending on software entertainment is likely to have a high correlation with consumer spending patterns.

#### Online Subscriptions

Online subscriptions comprise all types of revenues from all of the World of Warcraft products; this "includes subscriptions, boxed products, expansion packs, licensing royalties, and value-added services" (Activision Blizzard Inc., 2011a, p. 53). Through the launch of several updated versions of the game over the last decade, this segment has managed to attract a considerable number of subscribers. According to Activision Blizzard, the segment has over 10 million monthly active users (Activision Blizzard Inc., 2011b). Analysis of the past performance of this segment reveals a relative growth for 2010 and 2011 of -1.4% and 10.3%, respectively. From this information it is hard to discern any clear trend. However, including the relative growth of 8.33% for 2009, and assuming that the CAGR for these years are reflective of future performance yields a potential annual growth of 5.6%, or 4.3% in inflation-

© Robert Stenmark

adjusted terms (IMF, 2012). This growth can be justified by Activision Blizzard's long track record of releasing updated versions and expansions of the game with regular intervals, which optimally should enable the attraction of additional consumers. Moreover, the fact that the game is the world's most popular in its category (MMORPG) and that it has a large existing base of subscribers should also underpin this growth. Consequently, the first five years of the forecast is based on a real growth of 4.3%, followed by a steady decline in growth to the expected growth in private consumer expenditure of 1.3% for 2021 (as illustrated in Figure 30).

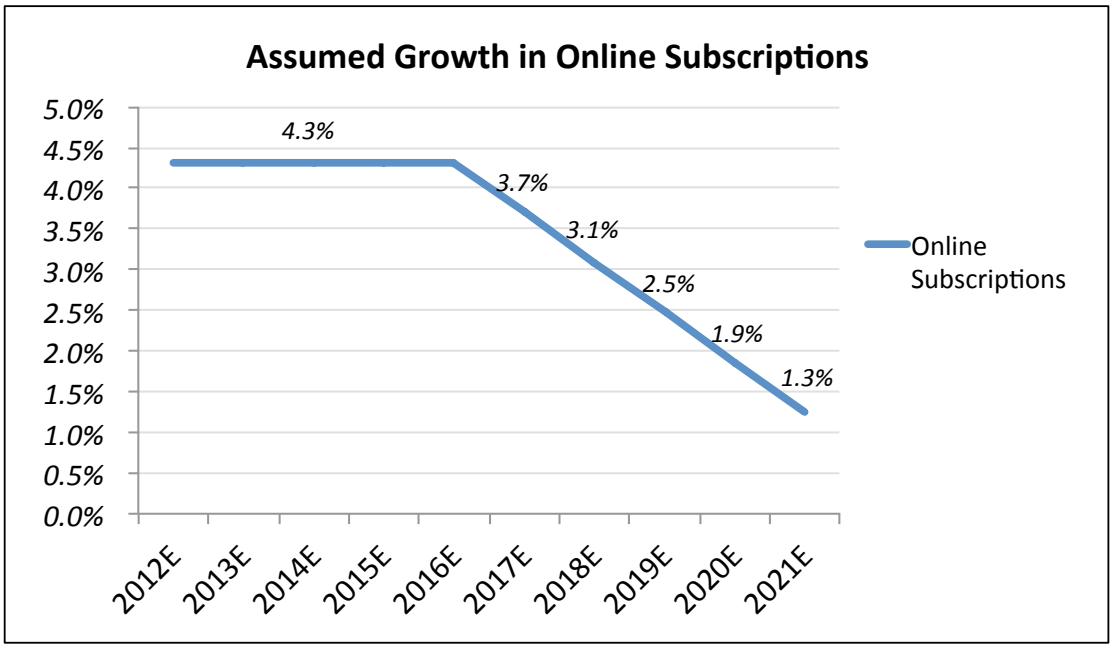



*Figure 30: Assumed Future Growth in Online Subscriptions*

### High Definition Platforms

This segment of Activision Blizzard has, through a switch in strategy and restructuring, received increased attention lately. The segment offers the largest potential for future growth, especially when considering the upcoming launch of the next-generation consoles. The introduction of the next-generation consoles will also make the market for casual games smaller, and should consequently drive a tougher competition in the high definition segment.

At Activision Blizzard, the high definition segment has enjoyed very high growth recent years due to some highly successful franchises, such as the Call of Duty titles. Figure 31 illustrates the high historical growth that has been reported in this segment since the merger in 2008. In the year following the merger, the company released its newest addition to the Call of Duty-franchise, Modern Warfare 2. This game, and other high definition games, contributed to a growth of 239.0% in revenues relative to 2008. In the two following years the growth rate has declined considerably, but still at a level that can be considered very high. In these years, growth was primarily driven by continued high sales from the Call of Duty-franchise, but was also positively affected by the release of Skylanders: Spyro's Adventure in 2011. Overall, the figure reveals that there is a trend of lower growth rates; a trend that is highly likely to continue into the future as its popular franchises has already established a position in the market. Moreover, the company has received some unwanted public attention from its community that may affect the future growth. Many consumers has complained that Activision Blizzard is unable to provide a complete product because

it does not provide the wanted service in terms of game fixes, lack good support channels, and in general does not satisfy the community's needs. These are issues that may put some pressure on future growth opportunities for the company.

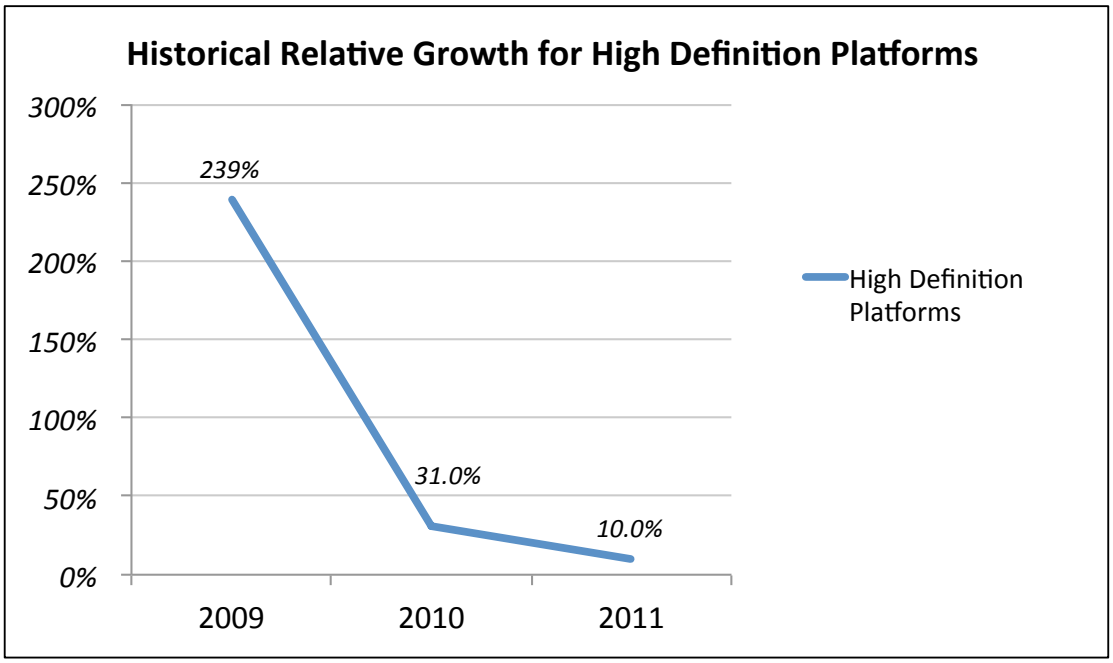



*Figure 31: Historical Relative Growth in High Definition Platforms(Activision Blizzard Inc., 2011a)*

The historical trend reveals that growth has rapidly declined, and shows all signs of continuing in this direction. In the future it is likely that Activision Blizzard's revenues from this segment will converge towards similar growth levels expected for the gaming software industry as a whole. The forthcoming two years will see the release of the next generation consoles, and one should expect many consumers in 2012 to postpone game their purchases in anticipation for the new consoles. When consumers postpone their purchases, it will directly lower the opportunity for software publishers to capture revenue growth. For this reason, it is assumed that the growth rate for Activision Blizzard will fall in 2012 to 4.5%, almost a half of what was observed in 2011.

After this initial year of forecast, it is expected that growth again will rise. The reason for this is outlined in the industry analysis as the tendency for software revenues to experience a bounce back in terms of growth in the year following new hardware releases. A similar trend is assumed to happen in 2013 after the Nintendo Wii U launch, but not the year after the release of the new Xbox and PlayStation (2013). The rationale for this is that the introduction of the Wii U in 2011 will drive revenues in 2013 and eliminate a great deal of the effect that normally should be observed in 2014. Based on this information it is assumed that Activision Blizzard will have a growth in 2013 similar to the growth in 2011, 10.0%. This is approximately 85% higher than the real growth of 5.4% expected for industry as a whole (Gartner, Inc., 2011; IMF, 2012). The higher growth is justified by their existing game franchises that have proved great abilities to capture revenues and it is assumed to be the main driver of the additional growth in 2013.

The following two years of the forecast assumes that a fall in growth to 5.2% and 4.4% in 2014 and 2015, respectively. The expected industry real growth is expected to be 3.5% for the same period (Gartner, Inc., 2011; IMF, 2012), which means that Activision Blizzard will be outperforming the market with approximately 50% and 25% these years. Moreover, this indicates a slow reduction of Activision

Blizzard's performance towards the overall market performance. This is a reasonable assumption as one would think that introduction of the new consoles will make the high definition market wider and attract more competitors to the market. As more companies enter the market, the competition intensifies and it is likely that the drive for survival will increase the overall software quality in the fight to pursue revenues. The increased software quality across the industry is likely to reduce the importance of older established franchises, which will lose much of their ability to generate excessive revenues. Furthermore, the expected high growth in the online segment is also an effect that is probable to put a damper on potential growth for the high definition segment. After 2015, it is assumed that the industry growth gradually will decline to levels similar to the long-term expected growth of advanced economies of 1.9%. The reason for this is that the consumer expenditure on entertainment is expected to increase relative to other expenditures. It is further assumed that using the real growth as a proxy, for the expected increase in revenues, is a reliable estimate for actual sales.

### Casual Platforms

The software revenues from casual platforms are generated by games published for Sony PlayStation 2, Nintendo Wii and handheld devices. This segment has experienced a significant reduction in importance over the last three years, reducing its proportion of total revenues with over 10%. The demand for casual games was down 37.4% and 15.3% relative to the prior year, for 2010 and 2011, respectively. The main driver for this development has been the declining demand for games for the Nintendo Wii. This is a trend that is expected to continue as the next-generation console from Nintendo is launched later this year, and thereby further reducing the number of games sold for the current generation console. In forecasting the revenues for this segment is assumed that the demand for games of the Nintendo Wii will follow structure similar to games associated with the PlayStation 2. After the introduction of the newer console, PlayStation 3, games for the PlayStation 2 declined at a moderate intensity and reached sales of roughly $200 million after three to fours years. For this reason it is assumed that the demand in the casual platform segment will have an annual decline of 12.5% up until 2015. The following year, 2016, is assumed to have a lower reduction in demand of 10%.

Moreover, games for PlayStation 2 is assumed to be cut from Activision Blizzard's product portfolio as of the end of 2011, as revenues generated in this segment is currently close to zero. With the shortening of product cycles and intensified competition, the retirement for Nintendo Wii games are assumed to happen earlier in their life cycle, in 2018. To account for the retirement of these casual games, demand will fall with 25% and 30% for 2017 and 2018 respectively. The remaining forecast periods are expected to have an annual decline of 10% caused by Activision Blizzard's long-term focus on high-definition games. This focus is strengthened by the expansion of the number of high-definition consoles available in the market after 2013.

### PC and Other

Revenues in the *PC and Other* segment have historically been generated by the demand for PC games. However, recently, the product portfolio offered by this segment has expanded to include toys for the highly popular game Skylanders: Spyro's Adventure. In the forthcoming years Activision Blizzard is expected to

release Diablo III and it is currently developing a new MMORPG game that will, if successful, support long-term growth.

In 2010, the company had a relative growth of 97.0% due to the release of the newest addition to the game franchise StarCraft. This was a high and non-sustainable growth and in 2011 the relative growth fell to 15.1%. Unlike the growth in 2010 that was driven by StarCraft sales, the growth in 2011 was generated by the increased sales of toys to Skylanders: Spyro's Adventure. This information points in the direction of high games sales in the introduction year, followed by fewer sales in the years following the release. In a matter of fact, this was observed when the game Diablo II was released in 2000 (Karimzad & Grant, 2012). The game sold 2 million units in the launch year, followed by a slow growth in the installed base in the succeeding years. By 2009, the game had been sold in over 7 million copies and had proved as a good long-term provider of growth. For this reason, it is assumed that most games sales is generated in the launch year followed by years were sales support current level of revenues and provides some growth.

It should be noted that this market is quite mature but that it still has potential for growth. However, with the expected growth in online games that are designed for the same platform (PC), it will probably be hard to capture extraordinary high levels of growth that are persistent. With the expected release of the game Diablo III in 2012, it is assumed that growth will be fairly high, as past Diablo-releases has generated high sales volumes. Although recent growth has been very high, it is assumed that the growth in 2012 will be high but still at lower levels that in 2011. The reason for this is that one should expect to observe intensified competition in the market for games for computers (for both online and regular games). The growth in 2012 is set at 12.0%, which mainly is attributed to the release of Diablo III and the continued sales of toys for Skylanders: Spyro's Adventure. The following years it is assumed that the intensified competition will put a damper on the growth opportunities and growth will fall to industry wide levels in 2014-2015. This is indicates by a real growth of 7.0% and 3.5% for 2013 and 2014-2015, respectively. In subsequent years, similar to online subscriptions, the growth is expected to gradually decline to a long-term private consumer spending growth of 1.3%.

### Distribution

The distribution business, formerly owned my Blizzard, "consists of operations in Europe that provides warehousing, logistical, and sales distribution services to third-party publishers of interactive entertainment software, [their] own publishing operations, and manufacturers of interactive entertainment hardware" (Activision Blizzard Inc., 2011a, p. 4). Over the last three years the business unit has reported very unstable growth (see Figure 32), and no distinct trend can be discerned based on these data.

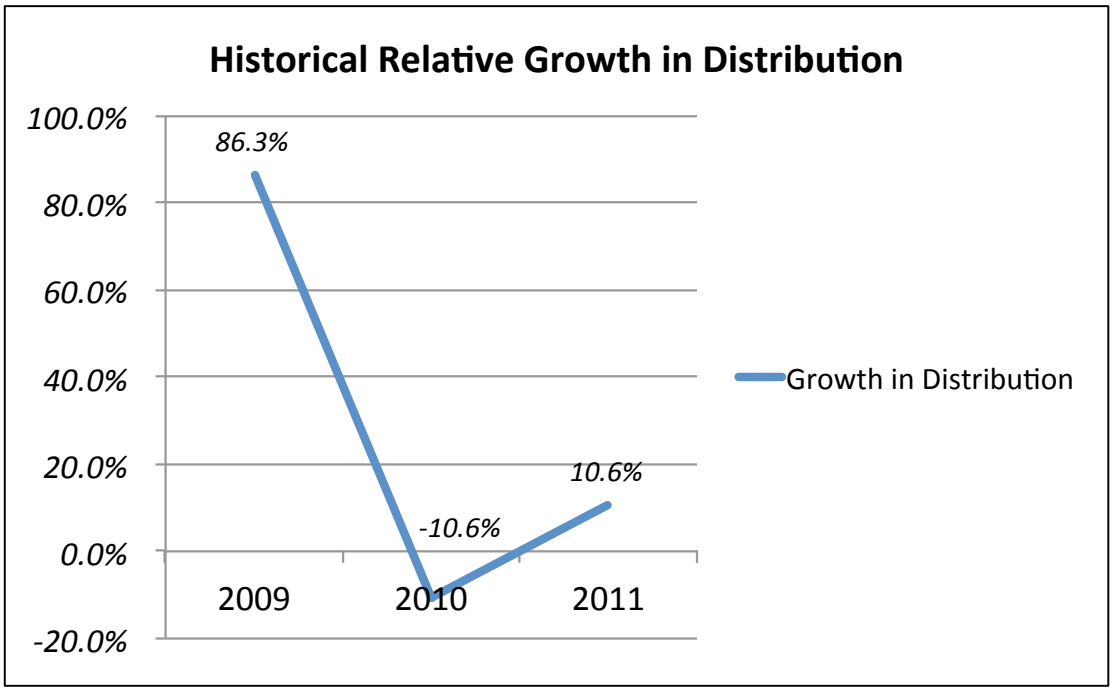



*Figure 32: Historical Relative Growth in Distribution (Activision Blizzard Inc., 2011a)*

Nevertheless, since the distribution business is located in Europe it is likely that its revenues are highly correlated with the real GDP in this region. The International Monetary Fund (2012) reports an expected real GDP growth of -0,3%, 0.9% and 1.7%, for the years 2012, 2013 and 2017, respectively. Moreover, it is assumed a real GDP growth at the end of the forecast of 1.7%, equal the average growth for the period 1994 to 2013 (IMF, 2012). Using this information it is possible to derive potential growth rates for the distribution segment (see Table 12 for the complete growth rates assumed in the forecast). Furthermore, when calculating the prospective growth for the distribution business it is also important to consider that digital delivery of software is increasing at the expense of physical distribution, i.e. physical distribution should be expected to decline in the long-term. To account for the potential of digital deliveries, the growth rates have been adjusted down slightly to reflect reduced demand for physical delivery of interactive entertainment software.

**Forecasted Growth in Distribution Compared with Real GDP**

(in percent)

| | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|
| Real GDP | -0.3% | 0.9% | 1.1% | 1.2% | 1.5% |
| Distribution | -0.3% | 0.8% | 0.9% | 1.0% | 1.2% |
| | **2017E** | **2018E** | **2019E** | **2020E** | **2021E** |
| Real GDP | 1.7% | 1.7% | 1.7% | 1.7% | 1.7% |
| Distribution | 1.4% | 1.4% | 1.4% | 1.4% | 1.4% |

*Table 12: Forecasted Growth in Distribution Compared with Real GDP (IMF, 2012)*

### *Expense Forecast*

As specified earlier, the expenses are presented in an orderly fashion on a consolidated level. The operational expenses are classified as *Cost of Revenue*, *Product Development*, *Sales and Marketing*, *General and Administrative*, and *Impairment and Restructuring*. Expenses have, in general, decreased considerably over the last three years, which may be due to recent restructuring that has focused on "development and publication of a reduced slate of titles on a going forward-basis" (Activision Blizzard Inc., 2011a, p. 46). In addition, Activision Blizzard currently has some of the lowest costs across the industry, in terms of total revenue. For this reason, substantial future reductions in expenses are unlikely.

#### Cost of Revenue

Cost of revenue includes expenses related to manufacturing, software royalties, and online subscriptions and intellectual property licenses. Total cost of revenue has decreased from 53.9% to 36.9% relative to total revenue after the merger in 2008. The decline originates from fewer game titles released over the period, and an increased focus on franchises that have proved to be successful, which has led to a reduction in Product Costs. The Product Costs are the largest driver of costs for Activision Blizzard, and currently accounts for 23.8% of the total revenues. As already mentioned, its reduction is a result of overall restructuring of the company's operations, and is assumed to stabilize at the current percentage of total revenues for the future. Moreover, Activision Blizzard has announced that its all of its restructuring plans are completed (Activision Blizzard Inc., 2011a, p. 46), and it is consequently fair to assume that all cost reductions associated with restructuring are completed. Keeping the forecasted Product Costs constant also allows some room for years with higher costs that are offset by the expected cost savings associated with digitally delivered products.

Another expense classified as cost of revenue is expenses that occur in the process of handling online subscriptions. One would think that most rational way to forecast this line item is through the use of a historical percentage of the online subscriptions revenue. However, an analysis of the costs associated with online subscriptions reveals that the costs have a more consistent relationship with the total revenues (see Figure 33). For this reason, an average cost of 5.1% to total revenues for the last three years is used to forecast the Online Subscription expenses. This rate is slightly higher than for the fiscal year 2011, but is still consistent with historical expenses.

© Robert Stenmark

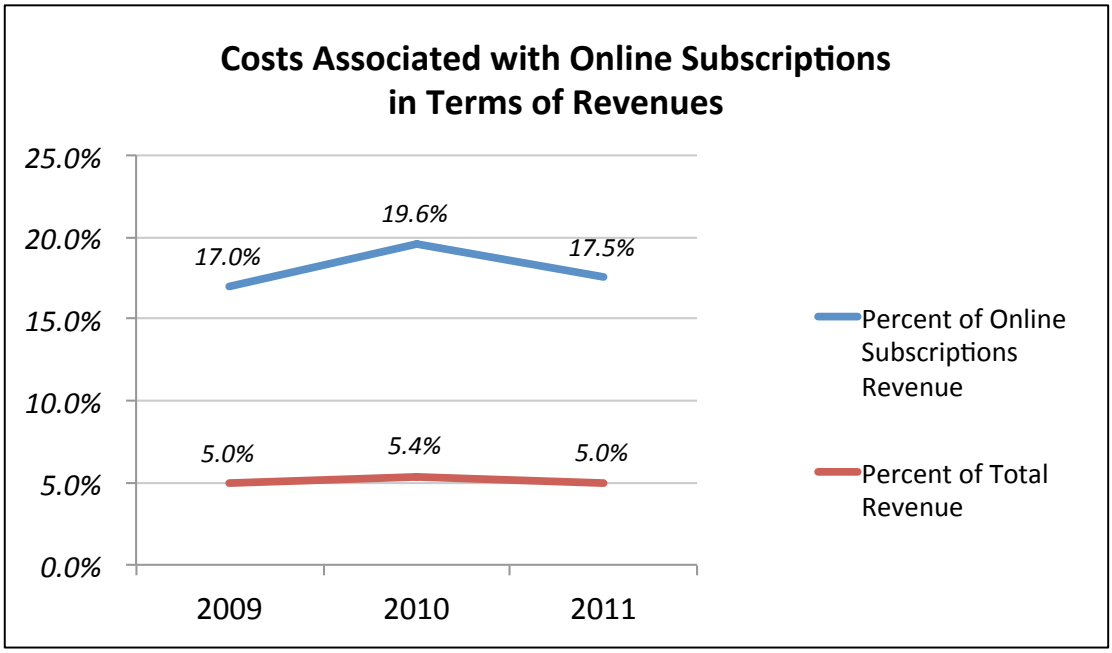



*Figure 33: Costs Associated with Online Subscriptions (Activision Blizzard Inc., 2011a)*

The last two drivers of the cost of revenue are Software Royalties and Amortization and Intellectual Property Licenses, both of which have been very erratic over the last three years in terms of total revenues. The relationship between these expenses and the total revenues is illustrated in Figure 34. Unusually high amortization expenses in 2009 caused the high level of cost in Software Royalties and Amortization. In 2010 and 2011, amortization was at more normal levels and accounted for 30-40% of this type of expenses. This leads to suggest that the more recent expenses are more representative of what future expenses may look like. Hence, a weighted-average of the last three years is used to forecast the expenses, and assigning the more recent observations higher weighting. This yields a rate, in terms of total revenues, of 6.2% for Software Royalties and Amortization.

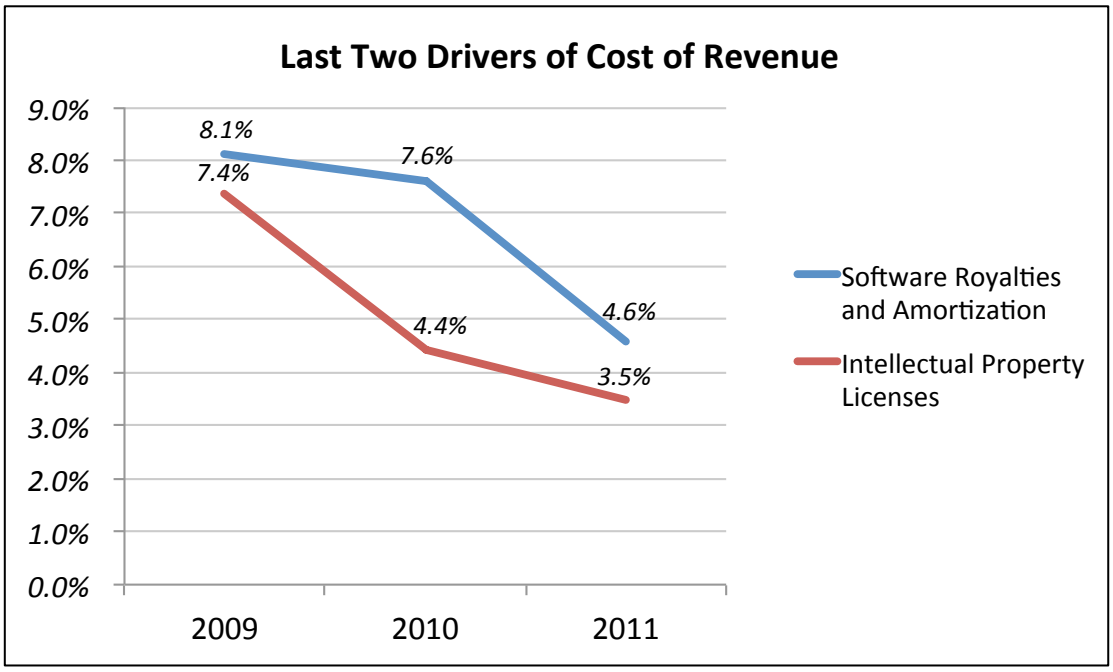



*Figure 34: Last Two Drivers of Cost of Revenue (Activision Blizzard Inc., 2011a)*

The formula applied to obtain a weighted-average rate for the forecast is the following:

$$Forecast\ rate = \left(\frac{3}{3!}\right) \cdot Expense_{2011} + \left(\frac{2}{3!}\right) \cdot Expense_{2010} + \left(\frac{1}{3!}\right) \cdot Expense_{2009}$$

This formula allows the most recent expense to account for more but still allows older expenses to adjust the forecast rate slightly. The formula is also applied to the expenses associated with Intellectual Property Licenses, as the more recent observations are more representative. The Intellectual Property Licenses have decreased over the last three years due to a more focused portfolio of products and fewer titles released during the years. In addition, the proportion of more in-house titles sold has increased compared to affiliated titles sold, leading to lower expenses associated with licenses. It is likely that this type of pattern in the expenses will persist, and that a weighted-average of the historical expenses of 4.4% be a reliable estimate for the forecast period in this valuation.

All the above assumptions related to the cost of revenue leads to a forecasted cost that accounts for 39.6% of the total revenues, which is 2.7% higher than the current rate.

### Product Development Expenses

The product development expenses have increased over the last three years. Despite of that, in terms of total revenues, the expenses have decreased from 14.7% to 13.6%. Table 7 identified a median R&D expense for entertainment software companies of 5.9% of total revenues, which points in the direction of high R&D expenses for Activision Blizzard. However, the companies included in the median estimate are competitors identified by Microsoft and most of them can be classified as conglomerates. Comparing cost of Activision Blizzard with companies of a more similar nature, i.e. other pure-play entertainment software publishers may present a more reliable sample for comparison. For this reason, an analysis of pure-play companies' costs was performed. The result from the analysis is summarized in Table 13 (for the complete list of companies and costs see Appendix 13). As the table includes several drivers of costs for the industry, the table will also be used as reference when discussing the other forecasted costs.

As can be observed in the table, when comparing Activision Blizzard's product development expenses to other pure-play companies, they are rather low. This does not imply that their R&D expenses are at lower levels, but that they are lower in percentage-terms to total revenues. Moreover, their choice of strategy and the likelihood that there exist some benefits to scale in this industry makes the lower percentage of R&D expenses come across as sensible. However, it should be noted that the product development are the most important driver of success in this line of business. Without proper allocation of resources to development of new games, the company may lose valuable customers and consequently risk the future survival of the company. Additionally, if more companies were to enter the market it is likely that overall quality of the software increases due to the intensified competition. Accordingly, it is assumed that the product development expenses can be managed at a lower level than the industry, but still increase over the length of the forecast to levels that are more similar to the industry.

**Costs at Pure-Play Entertainment Software Companies**

(in procentage terms of total revenues)

| | Cost of Sales | Research and Development | Sales and Marketing | General and Administrative | Restructuring | Total Cost |
|---|---|---|---|---|---|---|
| Activision Blizzard | 36.9% | 13.6% | 11.5% | 9.6% | 0.5% | 72.1% |
| Average* | 39.5% | 28.3% | 19.6% | 29.0% | 0.5% | 92.7% |
| Median* | 39.5% | 26.4% | 20.5% | 9.9% | 0.0% | 98.2% |
| Average Costs Across the Industry** | | | | | | 87.3% |
| Median Costs Across the Industry** | | | | | | 89.0% |

*All of the above information is corrected for large outliers.*
** Based on companies with equal recognition of costs as Activision Blizzard (most American/European companies)*
*** Also including companies that recognizes costs differently from Activision Blizzard (most Japanese companies)*

*Table 13: Pure-Play Companies' Costs, Based on Annual Reports of Entertainment Software Publishers*

At initiation of the forecast the product development expenses are assumed to account for 14.2% of total revenues, which is identical to the three-year average R&D expenses. After 2012, it is assumed that the expenses gradually will increase to 17.7% of total revenues by the end of the forecast. The justification for this trend is based on the above discussion on how crucial the product development is for the industry. Furthermore, the reason why the costs do not increase to the same level of the industry is the likely cost savings that are embedded in their strategy of focusing on developing their existing game franchises rather than developing a large portfolio of games.

### Sales and Marketing Expenses

The sales and marketing expenses incurred at Activision Blizzard over the last three years have been more or less consistent in terms of total revenues. The average for the three years is 11.9%, which is considerably lower than the industry median of 20.5%. Nevertheless, it is reasonable to assume that Activision Blizzard is able to restrain some of expenses related to sales and marketing due to its fine reputation and its well-established game franchises. Assuming that Activision Blizzard are able to preserve their reputation and continue releasing new titles that build on their existing franchises, the forecasted sales and marketing expenses are set equal to the average for the last three years. The expenses will persist a constant proportion of revenues throughout the explicit forecast. Moreover, since its revenues are very high and expected to increase, the relative expenditures associated with marketing will increase over the extent of the forecast.

### General and Administrative Expenses

In the course of the last three years, general and administrative expenses have been fairly consistent, ranging from 8.4% to 9.6% of total revenues. As these expenses tend to be variable, they should be highly consistent with the sum of revenues earned in a given year. Furthermore, considering that the procedures that give rise to the expenses are often related to headcount, it is reasonable to assume that overall cost associated with general and administrative procedures will converge to the median of pure-play companies in the long run. In order for this to be true, access to a qualified and efficient workforce across the industry is crucial. With these two

assumptions in mind, and having knowledge of the industry median, the forecasted costs are assumed to converge to the median of 9.9% of total revenues over the next three years (2012-2014). For the rest of the forecast these expenses will remain consistent with the industry median.

### Impairment and Restructuring

Impairment losses are recognized when the recoverable (marketable) value of the intangible asset is lower than its book value (IFRS Foundation, 2012; FASB, 2012). For this reason, the size of the annual impairment loss is dependent on the development of the economic situation in the markets in which Activision Blizzard's intangible assets are marked-to-market. Moreover, future income streams from these assets will also affect impairments losses. To calculate the potential outcomes that may affect the book value of the intangible assets requires making dubious assumptions about numerous intricate variables, and is consequently, unlikely to provide any reliable estimate for the market values of the assets. That being the case, it is assumed that there will not be any future impairment losses due to fair value remeasurements in the forecasted period.

Over the last three years, Activision Blizzard has recognized costs associated with restructuring for both 2009 and 2011. These costs have amounted to approximately 0.5% of the total revenues for each respective year. Nevertheless, in the explicit forecast period it will not be recognized any costs associated with restructuring as the company has announced that it does not intend "to incur significant additional restructuring expenses" (Activision Blizzard Inc., 2011a, p. 46).

### Operational Margin

As discussed in the company analysis, Activision Blizzard has experienced an increase in operational margin due to an overall reduction in expenses. The company has led a change in strategy that has enabled them to capture high revenues and at the same time reduce costs. This has resulted in increased margins for the company. Over the last three years operational expenses have accounted for 100.6%, 89.5% and 72.1% of the total revenues, respectively. The most recent observation is significantly better than the median of pure-play competitors, which has total operational expenses of 89.0% to total revenues. This illustrates how low margins are and how hard it is to succeed in this line of business. It should also be noted that there are a number of companies that are unable to secure a positive operating income, and that aim for positive cash flows in the future through their continued operations.

The above assumptions related to the expenses indicate that the initial forecast has costs amounting to 75.4% of total revenues. An over the course of time to costs will slowly converge to a rate of 83.8%. As already mentioned, this assumes that Activision Blizzard is able to preserve some of its reputation as a publisher of high quality entertainment software in the increasingly competitive industry.

### *Tax on EBITA*

Analyzing the effective tax that historically has been paid by Activision Blizzard reveals little consistent pattern (see Table 14). After the company merger in 2008, the company had two years where the operations yielded a negative bottom line and a resulting tax benefit. In the more recent years, however, operations have yielded a positive bottom line and the effective tax rate has been more consistent. It is

reasonable to assume that the future effective tax rate will be similar to this. Furthermore, it might be tempting to use an average for the last two years as a proxy for the tax rate, but the fact that the forecasted income before taxes are more similar to 2011, makes an effective tax rate of 19.0% more reasonable.

**Historical Effective Income Tax**

(in million dollars, except percentages)

| | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Income before Income Tax | (187) | (8) | 492 | 1,331 |
| Effective Amount of Income Tax | (80) | (121) | 74 | 246 |
| Corresponding Income Tax Rate | -43.0% | -1534.0% | 15.0% | 19.0% |

*Table 14: Historical Effective Income Tax for Activision Blizzard (Activision Blizzard Inc., 2011a)*

### *Capital Expenditures*

The capital expenditures are executed in order to secure the continued operation of the company's assets, which in turn provides future economic gains. As with Microsoft, investments related to intangible assets (intangible assets, software development and intellectual property licenses) are also included as capital expenditures due to the nature of Activision Blizzards core operations. It should be noted that investments in goodwill should also have been included, but since goodwill are assumed to remain constant it will not bring about any capital expenditures. Unlike Microsoft, the company carries out most of its capital expenditures in assets in order to preserve their overall value, i.e. assets are held at a level that preserves their overall value. For this reason it is assumed that all capital expenditures will be equal to each category's levels of depreciation. In the balance sheet the trend of replacing worn out assets is observed by the highly consistent values for these accounts (not including intangible assets). It is hard to make any explicit assumptions for the intangible assets. However, since the account includes the value of the franchises and the company expects to release several new additional titles building on these, it is reasonable to assume that the account will hold a future value similar to the current value. These capital expenditures are assumed to equal the expected annual amortization of 19 million.

Historically, the capital expenditures related to property and equipment has been $65 millions, $99 millions, and $69 million for 2009, 2010 and 2011, respectively. This is very close to the corresponding amounts for depreciation, which was $76 million, $68 million, and $75 million. These expenses are mainly related to acquisition of updated computer equipment to perform day-to-day operations (Activision Blizzard Inc., 2011a). Moreover, Activision Blizzard has announced that they will acquire computer hardware and software for approximately $100 million during 2012 (Activision Blizzard Inc., 2011a, p. 60). For this reason, capital expenditures related to property and equipment is assumed to be equal to $100 million in 2012, and the following years it will equal to the annual depreciation. It is noteworthy to mention that by assuming that capital expenditures related to property and equipment is constant, it will not take into account potentially high prices for technology products that may be required in the future.

The last type of capital expenditure is related to software development and intellectual property licenses (current and non-current assets). It should be pointed out that this is probably the most important capital expenditure, as the future of the

company is relies on the success of its software development. What is interesting to point out is that the annual historical amortization for these assets often has exceeded the accounts' balance, i.e. these intangible assets have been replaced in total. The fact that the amortization exceeds the total value of the accounts may be due to the recognition criteria applied to amortization. Moreover, the accounts' combined balance is fairly equal from year to year, suggesting that it is reasonable to assume that they will remain at this level in the future as well. For this reason, these capital expenditures is set equal to 100% of its current value, in line with the above information.

### *Depreciation and Amortization*

The depreciation and amortization applied in the valuation is based on historical rates. As noted earlier, the accounts have had a fairly consistent balance and applying rates similar to historical levels should hence provide a reliable estimate for future depreciation/amortization. Furthermore, since the accounts will take on very consistent values for the future, the depreciation/amortization rates are held constant throughout the forecast. The depreciation rate applied for property and equipment is set equal to the rate observed in 2011, assuming that this rate is the most reflective of future depreciation. The depreciation rate applied to the property and equipment corresponds to 44.4% of prior-year balance of the account. Amortization for the intangible assets has been more volatile, and taken on ratios from 21.0% to 45.6% of prior year account balance. A rate of 21.1% is applied in the forecast because it seems more reflective of future amortization, and since most of the intangible assets are amortized over 10-12 years.

Amortization related to software development and intellectual property licenses have historically been amortized in total. For this reason it is assumed that the same pattern persist in the future.

### *Dividends*

Activision Blizzard has not announced any target for its future dividends. The company's first cash dividend of $0.150 per share was announced 2010, and accounted for approximately 45.2% of the total net income. The following year, the dividend payout was $0.165 per share, equivalent to a payout ratio of 17.9%. Assuming that the company will continue to perform well and that they will transfer some of this wealth to its shareholders, the payout ratio is set at 30.0%, slightly lower than the average payout rate. This payout ratio will still allow for an increase in retained earnings, and at the same time provide financial flexibility for the company. As the future may offer an environment with intense competition, this financial buffer may be good to have if the financial situation were to change in the company.

### *Net Operating Working Capital*

The net operating working capital is calculated with the same formula as applied for Microsoft. The operating assets and liabilities that are included in the calculation are Accounts Receivable, Inventories, Software Development, Intellectual Property Licenses, Other Current Assets, Accounts Payable, Deferred Revenues, Accrued Expenses and Other Liabilities. The accounts Software Development and Intellectual Property Licenses will, for reasons outlined under capital expenditures, remain constant over the forecast period.

© Robert Stenmark

Starting with the asset side, the first item is the Accounts Receivable. This is revenue that will be received from companies such as Wal-Mart and GameStop. Measured in relation to total revenues, this line item has decreased from 17.3% to 13.7% over the last three years. Assuming that revenues from these sources will be a smaller part of total revenues in the future should be a reasonable assumption. The reason for this is the expected increase in digital delivery of games, and consequently it is probable that the retailers will sell less game copies in the future. For this reason, the forecast is based on a continuation of the declining trend in Accounts Receivables. The initial forecast is based on the same ratio to revenues as in 2011, followed by a gradual reduction to a ratio of 10.0% in 2021. The second item in the calculation is the Inventories, which has been quite unstable over the last three years when measured in terms of cost of revenue (see Figure 35).

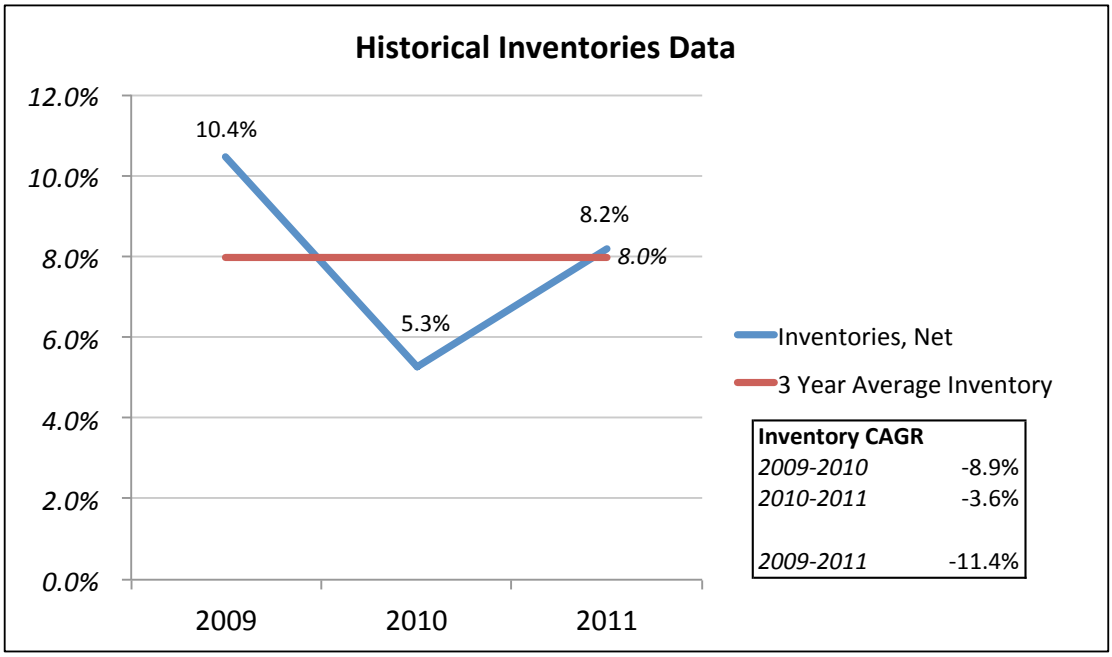



*Figure 35: Historical Inventories Data, Inventories in Terms of Cost of Revenue (Activision Blizzard Inc., 2011a)*

As the inventories have been slightly volatile over the last three years, using the average (as depicted in Figure 35) seems as a satisfactory proxy for the future. However, it should be noted that the figure also includes the CAGR for the relative values of the inventory. These growth rates display a direct decline in inventory of 11.4%, and provide additional information to the forecast. The reduction over the period may be caused by the 12.2% increase in revenues from digital delivered products, which naturally should reduce inventories. As the digital deliveries are expected to increase in the future, it is reasonable to assume that the inventory will be affected. With this in mind, it is assumed that the forecast will depict a reduction in the inventory in terms of cost of revenue from 8.2% to 5.3% over the forecast. This is equivalent to an annual decline of 4.8% in the forecast rate, or a cumulative decline in inventory of 17% relative to 2011. The third and final asset item is the Other Current Assets, which has been assumed constant for the future due to its nature.

On the liabilities side, the first item is the accounts payable. When measured in terms of cost of revenue, this item has historically increased from 13.1% to 22.2%. This is reasonable, as the company's historical performance has significantly increased over the last couple of years. For this reason it assumed that they to some extent are able to maintain the same level of credit in the future. However, as their costs increases it is also likely that the accounts payable in percentage terms to cost of

© Robert Stenmark

revenue will decrease due to stricter credit terms. For this reason it is assumed that the accounts payable will account for 22.2% of cost of revenues at the initiation of the forecast, and slowly decline to the average for the last three years, 17.5%. The second liability item is the deferred revenues, which are deferred from several of the segments listed in the revenue forecast. For this reason these revenues are forecasted based on total revenue. Its rate to total revenues was 33.3%, 38.8% and 31.0% for the fiscal years 2009, 2010 and 2011, respectively. The forecast bases the deferred revenues on the same rate as in 2011 with a gradual increase to 2016 to the average of the last three years of 34.4%. From thereon the deferred revenues are expected to remain at a constant level of total revenues. The assumed increase is based on the fact that Activision Blizzard expects to build on its digital revenue channels in the future, and since these frequently require payments for a whole year of membership they may require deferral. The fourth item is the accrued expenses and other liabilities, which includes costs such as accrued payroll related cost and deferred cost of sales. The account has been forecasted based on a rate to total operating expenses. The rate has been fairly consistent over the last three years, around 20.0%. Consequently, it is assumed that the future accrued expenses are equal to the average rate over the last three years, 20.1%.

The calculation of the net working capital, using these items, unveils that Activision Blizzard has had negative working capital over the last three years. When applying the above assumptions the forecasted net working capital yields comparable results. This is similar to Microsoft, and indicates that the company is unable to fund its short-term liabilities using solely short-term assets.

### *Financial Leverage*

The financial leverage for the company is assumed to converge to the level of debt in the industry in the long term. This would suggest using the current debt-to-equity level of the industry, which is 9.8%. However, it is likely that the future will bring much lower debt ratios, and that most companies will converge to no debt. The findings on operating costs for the pure-play companies, or more specifically the median operating margin of 11% (total revenues subtracted for all operating expenses), indicates a likely shift in the debt ratio. Such a low operating margin leaves little room for expenses besides the operational ones. Furthermore, one would expect that financial flexibility is highly valued in this industry, as a financial shortfall may force the companies to turn down projects that may yield high profit potentials. Despite of that, it can also be argued that the companies should exploit the current favorable pricing in the debt market to take on cheap debt on a shorter-term basis. Nevertheless, this paper will assume that long-term financial flexibility is valued higher than access to relatively cheap capital for Activision Blizzard, and consequently *no* short- or long-term debt is issued in the forecast period, leaving the company purely equity-financed.

### *Cost of Capital*

The cost of capital is calculated using the same theoretical analogy as for Microsoft. Moreover, as Activision Blizzard is very similar to Microsoft in terms of were it performs its operations and in terms of investor composition, the same risk free rate (3.42%) and market risk premium (5.20%) is applied to this valuation. This means that in order to calculate the cost of capital, the only components needed are the relevant measures for the beta. The reason for this is that the company is entirely

© Robert Stenmark

financed with debt, and for this reason the latter term in the WACC formula (the term that includes the cost of debt and the marginal tax rate) is omitted. In other words, when the company is entirely financed by debt the cost of capital can be calculated using only the CAPM model.

Damodaran (2012a) identifies a relevant beta for the entertainment technology sector as 1.48. This beta is, similar to Microsoft's beta, adjusted for the level of cash in the industry and consequently reflects the actual riskiness of the assets specific to the industry. Moreover, since Activision Blizzard is purely equity financed and it is expected to remain independent of debt in the future, the unlevered beta and the levered beta will be identical. Applying the identified beta to the CAPM model yields a cost of equity 11.2% for both the unlevered cost of equity and for the levered cost of equity.

| Valuation Parameters For ATVI | |
|---|---|
| Risk-Free Interest Rate (US Treasury 10y) | 3.42% |
| Risk-Premium US | 5.20% |
| U.S. Marginal Tax Rate | 19.00% |
| | |
| Target D/E (Industry) | 0.00% |
| Target D/(D+E) | 0.00% |
| Cost of Debt | 0.00% |
| | |
| Unlevered Beta | 1.48 |
| Unlevered Rate of Return, Equity | 11.12% |
| Activision Blizzard Levered Beta | 1.48 |
| Levered Rate of Return, Equity | 11.12% |
| | |
| WACC | 11.12% |
| Long-Term Sustainable Growth Rate | 1.90% |

*Table 15: Valuation Parameters For Activision Blizzard*

Finally, when applying the cost of capital to the free cash flow forecasted for Activision Blizzard yields an equity value (adjusted for off-balance-sheet items such as operating leases) of $13.4 billion, equivalent to $11.71 per share (Appendix 14). This value reflects a long-term sustainable growth rate of 1.9%, based to the average forecasted real growth in advanced economies 2011-2017 (IMF, 2012), after the explicit forecast period. The long term sustainable growth rate is set at this level because the majority of revenues will yield from the segment associated with high definition platforms, and this rate should reliably measure future growth if Activision Blizzard continues to release good titles.

The obtained value per stock is in line with both the range for 2011 and 2012 (see Table 2). Moreover, comparing the obtained equity value of $13.3 billion to the average $13.2 market capitalization of Activision Blizzard in 2011, suggests a underpricing of 1.5% in the active market.

### *Tax Shields and Costs of Financial Distress*

The tax shields and costs of financial distress are essential components needed to estimate the value of the company when applying the APV method. As outlined in the literature review, the tax shields and costs of financial distress need to be calculated to analyze their positive and negative side effects on the unlevered value of

the company. As Activision Blizzard is a company solely financed by equity, the obtained valuation of the company *is* the unlevered value. In other words, the unlevered value can be directly inserted into the APV model. Moreover, since the company has no debt outstanding it is considered to have no probability of default, and consequently the value of financial side effects (debt) and present value of bankruptcy costs are zero. As a result, the value obtained using the APV method is the equivalent of the WACC value.

### *Sensitivity Analysis*

The just presented valuation may be subject to high uncertainty with regards to the assumptions for the future; especially since the entertainment software industry is very hit driven. Performing a sensitivity analysis on Activision Blizzard's valuation will bring greater clarity to the possible future values of equity. Similar to Microsoft's valuation, the relevant variables that will be analyzed are the terminal growth rate, the level of debt, and some operating measures.

A change in the terminal growth rate of Activision Blizzard has the potential of providing a fair increase in the value of equity (see Table 16). However, the impact is not as large as for Microsoft, since the free cash flows of the company are more limited in size. Moreover, the lower terminal growth rates are more likely to be realized as the competition has intensified, and the consumer expenditures are likely to be relatively low in the future. This poses the left side of the table as more likely if the terminal growth rate were to change.

**Activision Blizzard's Sensitivity to Terminal Growth Rate**

| | Terminal Growth Rate | | | | |
|---|---|---|---|---|---|
| | **0.90%** | **1.40%** | **Base Case** | **2.40%** | **2.90%** |
| Change in Equity Value | -447 | -235 | - | 262 | 556 |
| Change in Value per Share | -0.39 | -0.20 | - | 0.23 | 0.48 |
| Percentage Change | -3.3% | -1.7% | - | 1.9% | 4.1% |

*Table 16: Activision Blizzard's Sensitivity to Terminal Growth Rate*

Furthermore, as Activision Blizzard currently has no debt, it is interesting to analyze the valuation impact of an increased leverage. As Table 17 illustrates, the level of debt provides higher value for the equity. The value-added of issuing debt is much higher than the equivalent for Microsoft. Their difference can be ascribed to Activision Blizzard's higher cost of equity, i.e. when leverage is increased the WACC decreases more. Moreover, it can be observed that the value of adding more debt is exponential.

**Activision Blizzard's Sensitivity to Increased Amounts of Debt**

| | Target Debt Ratio | | | | |
|---|---|---|---|---|---|
| | **Base Case** | **5.00%** | **10.00%** | **15.00%** | **20.00%** |
| New WACC | - | 11.02% | 10.87% | 10.68% | 10.44% |
| Change in Equity Value | - | 115 | 285 | 513 | 806 |
| Percentage Change | - | 0.9% | 2.1% | 3.8% | 6.0% |

*Table 17: Activision Blizzard's Sensitivity to Increased Amounts of Debt*

© Robert Stenmark

Changes in the operating variables is very likely to occur, and will have considerable impact on the equity value of the company (see Figure 36). This is very dependent on the company's ability to develop future successful hit titles. An increased number of hit titles will enable revenue growth, and costs may also be affected. Moreover, since the margins are slim in this industry a reduction in costs will have a large impact on the equity value.

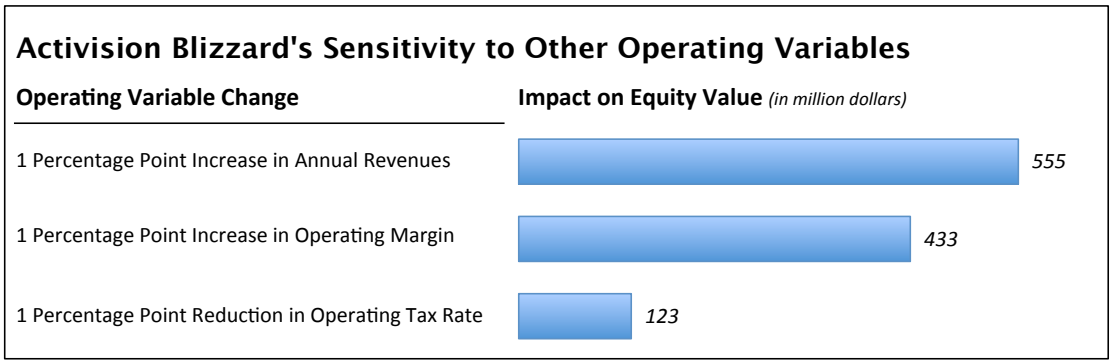



*Figure 36: Activision Blizzard's Sensitivity to Other Operating Variables*

# 7. Valuation of the Merged Company

In this section of the paper the valuation of the merged company is assessed. As outlined in the literature review, the value of the merged company will equal each respective company's standalone value, in addition to the value of potential opportunities that the deal creates, also known as synergies. Since the companies' standalone values are already calculated independently, what remains in order to obtain a value for the combined company is to value the synergies that are associated with the merger. The most frequent approach to this is to calculate the consolidated value of the two companies without synergies, for so to value the combined company with the potential synergies (Damodaran, 2005b). The total value of synergies will equal the difference between the two values obtained, and will be an important component when settling on what price to pay for the target.

## 7.1 Valuation of the Merged Company Without Synergies

The standalone values for Microsoft and Activision Blizzard have already been calculated, and can theoretically be added together to find the value of the merged company without synergies. However, in in order to make a reliable analysis of the implemented synergies, the underlying estimates for Microsoft and Activision Blizzard's values should be at a consolidated level.

Since Microsoft and Activision Blizzard operate in fairly similar industries, they have very comparable operations, which should make consolidation fairly straightforward. The consolidation will be built on the same assumptions as outlined in the standalone valuations, and should for this reason yield the same results. However, since the companies have different recognition of some elements in the financial statements, some additional assumptions still have be made to consolidate the underlying estimates that drives the enterprise value. Following, these underlying assumptions will be briefly discussed.

There are two essential parts that needs to be commented on the consolidation of the financial information for the two companies and its valuations. The first element that needs to be assessed is the income statements, and its components. When consolidating this financial information it is assumed that all revenues that derive from Activision Blizzard's operations will be consolidated under the Entertainment and Devices Division of Microsoft. This is the most rational distribution of the revenues, as Microsoft has all its game related revenues in this division. Moreover, the operational expenses will be allocated to their respective counterparts based on where they make the most operational sense. The other element that needs to be assessed is the cost of capital. The cost of capital of the independent valuations is built on the same values of risk free rate of return, market risk premium and long-term growth. Consequently, these will also apply in the consolidated valuation. However, since the companies are subject to different tax rates, target debt rates and betas, some assumptions needs to be in order. Since two companies are slightly different in these terms, the following assumptions have been used.

First, it will be assumed that the marginal tax rate that will apply in the calculation of the cost of capital can be found with the following formula, which yields a marginal effective tax rate of 19.39%.

$$Marginal\ Effective\ Tax\ Rate = \frac{Consolidated\ Provision\ for\ Income\ Taxes}{Consolidated\ Income\ before\ Income\ Taxes}$$

Second, when the companies are consolidated the debt ratio in the companies will change since Microsoft has debt and Activision Blizzard has not. Naturally, this means that when the companies are merged the total amount of debt to equity will decrease. For this reason it is assumed that the level of debt is kept at independent levels, leading to a somewhat lower debt-to-equity ratio for the merged company of 7.03%.

Third, as the companies operate in slightly different industries they are exposed to different levels of systematic risk, i.e. they have different betas. The solution to obtain a single unlevered beta for the valuation is to use a weighted-average beta based on each respective company's enterprise value (see Table 18).

| Weighted Average Calculations | |
|---|---|
| Enterprise Value of Microsoft | 344,598 |
| Enterprise Value of Activision Blizzard | 10,670 |
| Enterprise Value of Merged Company | 355,268 |
| | |
| Microsoft Weighted Average Rate | 97.00% |
| Activision Blizzard Weighted Average Rate | 3.00% |
| | |
| Unlevered Beta, Merged Company | 1.19 |

*Table 18: Weighted Average Calculations*

The results of calculating the cost of equity and the cost of capital using the obtained unlevered beta can be observed in Table 19. Using this information to find the consolidated value of the company yields an enterprise value without synergies of $357.1 billion. This value is only 0.5% higher than the one obtained when simply adding the two enterprise values ($355.3 billion). It should be noted that this minor difference is directly linked to the cost of capital applied to the consolidated free cash flows. When the cash flows are discounted, the slight difference is created when the variables in the denominator of the formula is exponentiated, i.e. the difference is a mathematical issue.

| Valuation Parameters For MSFT-ATVI | |
|---|---|
| Risk-Free Interest Rate (US Treasury 10y) | 3.42% |
| Risk-Premium US | 5.20% |
| U.S. Marginal Tax Rate | 19.39% |
| | |
| Target D/E | 7.03% |
| Target D/(D+E) | 6.57% |
| Cost of Debt | 3.16% |
| | |
| Unlevered Beta | 1.19 |
| Unlevered Rate of Return, Equity | 9.60% |
| Merged Company Levered Beta | 1.26 |
| Levered Rate of Return, Equity | 9.96% |
| | |
| WACC | 9.42% |
| Long-Term Sustainable Growth Rate | 1.90% |

*Table 19: Valuation Parameters For Merged Company*

© Robert Stenmark

## 7.2 Valuation of the Merged Company With Synergies

The value of the two companies combined has now been established (see Appendix 15 for the integrated financial information and the corresponding valuation), and the synergies can be implemented to finalize the valuation of the merged company. In order to do this, an evaluation of the probable synergies and the merged company's ability to succeed in realizing these is required.

When acquiring a company there exists a plenitude of potential synergies, both operational ones and financial ones. The synergies that are accessible often tend to differ depending on the industry and the companies that are involved in the merger. One should however analyze potential synergies with caution. The reason for this is that some synergies are more apparent than others and hard to realize, while others are not that apparent but easier to realize. Moreover, other synergies may appear as effortless to realize when they in fact are remote, and hence pose no or little value for the company on both a short- *and* a long-term basis. When including costs of implementation in the consideration, they might even be value destroying for the company.

In the following section, an analysis of the potential synergies created in the merger will be carried out. The equity markets have too often been witness to the failure of companies' efforts to achieve anticipated synergies, as the companies have been overly optimistic when analyzing the synergies. This has lead many companies to lose money in the longer term due to restructuring charges that exceeds the upside potential of the synergies, *or* that the price paid for the target is too high. As a result of this, the upcoming analysis will be rather conservative in the attempt to avoid overestimating the value of the synergies that can be created.

### 7.2.1 Analysis of Potential Synergies

Microsoft and Activision Blizzard are companies that operate in a high paced industry, which is characterized by high competition and frequent technological innovations. A consolidation of the companies can enable them to streamline their operations and improve the exposure to the entertainment software industry. The consolidation provides means to achieve operating as well as financial synergies (Damodaran, 2005b).

Prior to analyzing the operating- and financial synergies, some general considerations and assumptions will be discussed briefly. As Microsoft and Activision Blizzard both are very similar companies in term of their operations, they avoid some consolidation issues that might have posed as a problem otherwise. First, since both of the companies are U.S. listed; a reconciliation of the financial statements will not be troublesome or increase costs of accounting. Second, since the nature of the two companies is suggestive of fairly similar systems of employee benefits/compensation, it is assumed that this will not have an effect on future enterprise value. If benefit plans were in fact different, a reconciliation of the two policies would be likely to occur, and consequently the enterprise value would be affected. Third, it is assumed that the companies do not have conflicting suppliers that otherwise could have posed a potential problem after a merger. If they have such relationships, it is assumed that these issues can be resolved in the short-term by terminating the relevant contracts, and that this will have no effect on the enterprise value.

© Robert Stenmark

### *Operating Synergies*

These are synergies that are concerned with the operations of the combined company, and that increases operating income from existing assets (Damodaran, 2005b). On a general level, these synergies can be separated into revenue synergies and cost synergies. On the one hand, competitors and costumers reactions significantly affect revenue synergies, and they are for this reason very hard to predict (Sirower & Sahni, 2006). On the other hand, synergies associated with costs are concerned with internal issues that more reliably can be estimated, and consequently easier to realize. It is for this reason more likely that the operations of Microsoft and Activision Blizzard will yield more value through cost synergies, compared to revenue synergies.

Other components that will be discussed include synergies associated with working capital and capital expenditures. These will have an effect on the operating performance of the new company, and may for this reason yield some value through synergies.

#### Revenue Synergies

As already mentioned, these are synergies that may be hard to realize due to their reliance on external factors. Moreover, Sirower and Sahni (2006) suggest postponing implementation associated with revenues synergies until the business has stabilized and the new cost structures have been firmly established. For these reasons, the considered synergies will tend to be more conservative rather than optimistic, and they will come into affect one year after the consolidation at the earliest.

First, one of the more apparent synergies that are highly likely to take place is an increase in bundling of products, i.e. selling Microsoft's console in the combination with a game from Activision Blizzard, or an accessory for the console and a related game. In other words, the products are sold at a bundled price that is lower than the sum of the prices for the separate products, providing the company with additional revenues that yields a marginally higher cost. This is a strategy that is already implemented by Microsoft with a limited number of popular games. However, these bundled packages with third-party games are seldom observed in retail stores when new consoles are launched (due to a lag in the game development when new consoles are released). Moreover, it is highly likely that Microsoft earns some royalties from this type of bundling, which will result in a slight reduction in revenues from royalties if the product is bundled with Activision Blizzard games. Activision Blizzard would, on the other side, reduce its cost of such bundling, since some of the past products have been sold this way. Finally, as both companies have a strong reputation and its products are highly popular, it is likely that an increased amount of bundling of their products will enable them to capture additional revenues in the future. For this reason it is assumed a conservative increase of 0.75% in revenues in terms of each respective year's revenues, starting in 2014. This represents an increase that is net of higher costs and lost royalties for Microsoft. The calculation of the increase will be based revenues from 90% of Microsoft's Entertainment and Devices division (Xbox revenues), and revenues from Activision Blizzard's high definition segment. The increase in sales from bundled products should be extra apparent in 2013 because of the launch of the new console. For this reason the increase in 2013 is set at 1.5% of the revenues, which is assumed to originate from the consumers higher demand for bundled products in launch years.

© Robert Stenmark

Second, Activision Blizzard has its own distribution business in Europe that "provides warehousing, logistical, and sales distribution services" (Activision Blizzard Inc., 2011a, p. 4) to publishers of interactive entertainment software and hardware. This presents an opportunity for Microsoft to utilize this distribution network instead of third party sources, to distribute its product in Europe. This would lead to an increase in distribution revenues for Activision Blizzard, while it will provide Microsoft with lower somewhat lower cost (will also be discussed under cost synergies).

The financial information available for Microsoft, does not allow for a direct interpretation of on how much they spend on distribution of their products. Estimates from the time of the new millennium presented distribution costs that were approximately 6% of the final price of the product (Campa & Goldberg, 2006). This percentage will be applied to the total revenues for the Entertainment and Devices division to obtain an estimate for the distribution costs. This will produce an estimate that will undervalue the distribution costs as it is based on revenues for Microsoft and not for the final price. However, the technological innovations have been high paced over the last ten years, and would suggest that margins may have been pushed down, making 6% a reliable estimate. Furthermore, as Microsoft is a global company it will be assumed that 30% or the distribution costs can be allocated to the European market. The obtained value for the European distribution costs can now be allocated to Activision Blizzard as increased revenues from distribution. This synergy directly assumes that the quality of the new distribution offered by Activision Blizzard is equivalent to the prior distribution channel, and that the contract with the old distributor can be terminated within 2012.

Third, the merger presents a great opportunity for the company to enter the mobile games industry. Microsoft already holds expertize within mobile software development, while Activision Blizzard has a great deal of games that have already has been developed. This ideally means that the new company could publish existing games directly for use on mobile phones. However, this market is characterized by intense competition from both third-party publishers, as well as independent developers, and the published games have a much lower price range (i.e. lower margins) compared to console/PC games. Considering that neither Microsoft nor Activision Blizzard has established a market in this segment it would be immensely complicating to forecast what growth or market share that potentially can be captured. One way to determine a proxy for potential revenues that could be captured would be to examine companies of similar size to Activision Blizzard, and use their fraction of mobile sales to total sales to forecast the synergies. In this situation Electronic Arts is comparable, and approximately 5.0% of their total revenues originate from mobile games (Electronic Arts Inc., 2011a). Nevertheless, Electronic Arts have been developing games for mobile phones for several years, which makes their sales ratio much higher than what can be expected. Recognizing that there exists limited information available to build a reliable forecast and that the revenue synergies are to be held conservative, suggests leaving out this synergy to avoid an overestimation of the potential synergies. Furthermore, not knowing if all the needed expertize is in place or the amount of costs associated with entering this market also favors this decision.

© Robert Stenmark 

### Cost Synergies

Cost synergies are easier to implement since they are concerned with internal matters that more reliably can be predicted, and that management to a greater extent can control (Sirower & Sahni, 2006). Since management holds internal information on historical cost reductions and measures that can reduce the overall costs, they are able to forecast the additional value created with increased accuracy and the realized cost reductions usually do not stray far from projections.

It noteworthy to mention that the cost synergies mainly will affect the Entertainment and Devices division (EDD) of Microsoft, and it is for this reason assumed that costs that derive from this division will have the same proportion of costs as the average over the last three years. As Microsoft does not present exact financial data on expenses related to each division, these expenses are calculated based on reported increased amounts of expenses and their respective percentage increases for the last three years. The findings are presented in Table 20 (see Appendix 16 for detailed information on its calculations). The table reports the average expenses for the division to the total expenses for the given expense group, e.g. the average cost of revenue for the EDD division accounts for 32.9% of the total cost of revenues. These percentages will be used to calculate the future expenses, and consequently will be helpful to find synergies that potentially can be realized.

**Average Expenses Attributable to the Division**

(in percent of total expenses for the given expense )

| | |
|---|---|
| Cost of Revenue | 32.9% |
| Research and Development Expenses | 11.2% |
| Sales and Marketing Expenses | 6.1% |
| General and Administrative Expenses | 4.0% |

*Table 20: Average Expenses for the Entertainment and Devices Division*

The first synergy is linked to the costs that Microsoft can save in transferring its European distribution contract to Activision Blizzard. Referring to back to the section on revenue synergies, the merged company will be able to reduce its costs slightly due to the European distribution business of Activision Blizzard. Expanding the above discussion to include the cost reduction, will lead to a slight reduction in costs for Microsoft. It will be assumed that Activision will charge a price equal to its cost, i.e. it charges no premium for its service. As the margins are small for distribution of products, it will also be assumed that Activision Blizzard is able to provide a 6% discount to the current distribution costs (equal to the distribution cost in terms of the final price).

Second, when games are to be released the publisher needs to pay a fee to the official manufacturer of the given console, know as a license fee. This fee is paid for the use of technology owned by the manufacturer. The license fees from Activision Blizzard will be eliminated after the merger, together with the corresponding revenues that Microsoft recognizes. Moreover, it is reasonable to assume that Microsoft make use of some of these license fees to cover operational expenses concerned with the approval of new games and associated promotional material, while also charging a premium for the service rendered. This means that approval process and its costs allow Microsoft "substantial influence on the cost and the release schedule of interactive entertainment software products" (Activision Blizzard Inc., 2011a, p. 24).

© Robert Stenmark

As a result of the merger, the effect of the license fees are cancelled out, but the net effect will still carry a cost reduction for Microsoft's approval process. Furthermore, the console manufacturers hold the exclusive right to manufacture all games for each of their respective consoles. In effect, the merger will also allow for a cost reduction (net effect) in manufacturing of games published by Activision Blizzard, assuming that Microsoft currently charges a premium for this process. Given Activision Blizzard's large number of successful products it is reasonable to assume that the merger will provide a sizable discount in production costs. Based on this discussion, it is assumed that the recurring approval costs for Microsoft are only a small proportion of its cost of revenue, while the discount that is obtainable for Activision is more sizable. For this reason the annual obtainable cost savings associated with these synergies are set to a cost reduction of 0.05% in approval costs, while a 8.9% discount in manufacturing of games for Activision Blizzard, both which are assumed to start in 2013. Both reductions will be deducted from the cost of revenues for each respective company. Moreover, the 8.9% discount is based on the average operating margin for the EDD division for the last three years, obtained using information in Table 21. The rate is applied to Activision Blizzard's product costs, assuming that 70% of these costs are attributable to manufacturing of games.

**Operating Margin for EDD Division**

(in million dollars, except percentages)

| | 2009 | 2010 | 2011 |
|---|---|---|---|
| Revenues Attributable to EDD Division | 6,416 | 6,224 | 8,716 |
| Operating Income Attributable to EDD Division | 288 | 573 | 1,135 |
| Operating Margin | 4.49% | 9.21% | 13.02% |

*Table 21: Operating Margin for Microsoft's EDD Division (Microsoft Corporation, 2011a)*

Third, knowledge sharing and exploitation of resources within research and development should be expected. However, since the companies have very specific expertize within their respective fields (Microsoft – consoles, Activision Blizzard – games), the expected cost savings should be somewhat limited. It is assumed that the savings mainly will be related to a headcount reduction of Microsoft's game developers. It is further assumed that Activision Blizzard will provide the merged company with an improved workforce of game developers that replaces those who are relieved of their duty. Moreover, Microsoft produces very few games, and hence the existing number of game developers should be fairly low. For this reason it is assumed that the annual cost savings that is realized through headcount reduction amounts to only 1% of the annual R&D expenses for Microsoft, starting in 2013.

Fourth, there are opportunities to reduce the total marketing expenses used to commercialize the merged company's products. This synergy is tightly linked to the bundling of products discussed under potential revenues synergies. Increasing the practice of selling bundled products also enables increased use of cross marketing, i.e. marketing products collectively. The use of cross marketing provides the company with a direct opportunity to market their products more economical, since the total amount of advertising campaigns can be reduced. Moreover, both companies have very similar spending patters on their sales and marketing efforts. Microsoft's EDD division has expenses averaging 11.6% of revenues based on the last three years,

while Activision Blizzard has slightly higher average expenditures of 11.9% to revenues. If all the future marketing campaigns were to be performed collectively, and the new company targeted approximately the same amount of marketing exposure, a reduction of the expenses could theoretically be divided in two. However, opening up the opportunity for independent marketing as well, would indicate a slightly lower reduction in the sales and marketing expenses. For this reason it is assumed that these expenses will fall by approximately three percentage points, to 8.5% of total revenues from the entertainment software segment, starting in 2012. The reduction is predominantly attributed to the increase in bundling of products, which in effect enables an increased amount of cross marketing.

Finally, the merger should clearly pose an opportunity to reduce expenses related to General and Administrative procedures. As Microsoft is a very large organization with a long track record and good functional strength, the company has over the years managed to reduce their expenses related to general and administrative procedures by centralizing these services. The forecasted period displays an expected spending on these services of 6.5% of Microsoft's revenues. However, analyzing these expenses for the EDD division over the last three years shows a reduction from 3.1% to 1.9% of its revenue (Microsoft Corporation, 2011a). It is more likely that the expenses will be similar to these as both companies publish games and probably have many similar procedures that can be integrated. For this reason, the consolidation will lead to a reduction of general and administrative expenses to 1.9% of total revenues in 2013. This assumption will be justified by a reduction in total headcount and centralization of services rendered, where more divisions share the total costs (hence reducing cost per division).

### Working Capital Synergies

One of the less apparent synergies that can be realized concerns the net working capital, albeit small effect compared to enterprise value. It is still important to take into consideration, as it may offer an easy adjustment to slightly improve value. A change in the right direction can be directly translated to a more effective use of the business' short-term funds, and will hence add overall value. Although most of the components in the net working capital may seem hard to change, there are ways to improve its components so that it improves the value of the new company. The first, and most obvious improvement is to reduce inventories for Microsoft and Activision Blizzard's expected increase in online delivery of products. However, this adjustment has already been built into the independent valuations, and an additional adjustment does not present itself as justifiable. The second improvement that can affect the value of the company relates to the credit lines available. Since Activision Blizzard is being merged with a company with a long track record and that appears as more financially stable, it may gain access to the same credit lines as available for Microsoft.

An analysis of the credit lines for the two companies will reveal if there are potential synergies that can be realized. The analysis is based on the calculation of average days receivables and average days payables, which will reveal the average number of days that are used to receive payments/pay outstanding payments. The results of the analysis are presented below (Appendix 17 provides an explanation on how the various estimates are calculated).

**Potential Synergy of Increased Credit Lines**

| | 2009 | 2010 | 2011 | Average |
|---|---|---|---|---|
| **Accounts Receivable** | | | | |
| Activision Blizzard Accounts Receivable | 739 | 673 | 649 | 687 |
| Activision Blizzard Average Days Receivable (in days) | 63 | 55 | 50 | 56 |
| Microsoft Accounts Receivable | 11,192 | 13,014 | 14,987 | 13,064 |
| Microsoft Average Days Receivable (in days) | 70 | 76 | 78 | 75 |
| **Accounts Payable** | | | | |
| Activision Blizzard Accounts Payable | 302 | 363 | 390 | 352 |
| Activision Blizzard Average Days Payable (in days) | 48 | 62 | 81 | 64 |
| Microsoft Accounts Payable | 3,324 | 4,025 | 4,197 | 3,849 |
| Microsoft Average Days Payable (in days) | 100 | 119 | 98 | 106 |
| | **2009** | **2010** | **2011** | **Average** |
| **Potential for Increase of Credit Lines for Activision Blizzard*** | | | | |
| New Potential Accounts Receivable Balance | 820 | 926 | 1,019 | 922 |
| Increase in Accounts Receivable Due to Increased Credit Lines | 81 | 253 | 370 | 234.54 |
| (in percent) | 10.9% | 37.6% | 57.0% | 35.2% |
| New Potential Accounts Payable Balance | 631 | 690 | 473 | 598 |
| Increase in Accounts Payable Due to Increased Credit Lines | 329 | 327 | 83 | 246 |
| (in percent) | 108.9% | 90.2% | 21.2% | 73.4% |

** Increase applied to historical data for illustrative purposes*

*Table 22: Potential Synergy of Increased Credit Lines*

The analysis unveils that there are in fact differences between the collection periods and the payment periods. On the one hand, Activision Blizzard has a lower collection period than Microsoft. This is a desirable position as it indicates that money is collected within a shorter time span. Since a move to a higher collection period is detrimental, it will be assumed that Activision Blizzard is able to maintain its credit policies for distant future. On the other hand, Activision Blizzard's payment periods are much more frequent than those of Microsoft. This extended payment period may be ascribed to Microsoft's historical performance, and to the fact that it is among the largest companies in the world. All things considered, it should be highly likely that Activision Blizzard will be granted extended payment periods due to Microsoft's financial backing. This indirectly means that the company will be able to take on higher levels of accounts payable, as the calculations in the lower part of the Table 22 suggests. Based on these findings, it will be assumed that Activision Blizzard will be granted identical payment terms as for Microsoft the year after the merger (2013), and its accounts payable balance will be calculated in relation to the average days payable for Microsoft each respective year. Moreover, the accounts balance will have a maximum limit equal to the total amount of purchases every given year. It is important to note that it is not the increase in accounts payable that will affect the value but rather the *change in working capital*, and that this change is purely attributable to Microsoft's favorable credit terms.

### Capital Expenditure Synergies

Microsoft and Activision operate in an industry that requires extensive investments in technological hardware and software in order to successfully perform day-to-day operations. For this reason, it is reasonable to assume that there will be potential for savings in capital expenditures related to property and equipment. Lacking access to the newest technological innovations may leave the companies lagging behind on the software development front, and consequently they may risk

losing market share. As a result, the majority of its assets in both companies' property and equipment are related to computer equipment and software (see Table 23). This is also where the greatest potential for savings in future investments exists.

**Property and Equipment for Microsoft and Activision Blizzard**

| (in percent of total property and equipment) | Microsoft Corporation | Activision Blizzard Inc. |
|---|---|---|
| Land | 3.0% | 0.2% |
| Buildings and Improvements | 36.2% | 0.9% |
| Leasehold Improvements | 13.0% | 13.5% |
| Computer Equipment and Software | 36.7% | 76.2% |
| Office Furniture and Other Equipment | 11.1% | 9.2% |
| Total Property and Equipment | 100.0% | 100.0% |

*Table 23: Property and Equipment (Microsoft Corporation, 2011a; Activision Blizzard Inc., 2011a)*

Microsoft is clearly the company with the largest capital expenditures related to property and equipment. Put it in perspective, the average capital expenditures by Microsoft over the last three years were 34 times larger than Activision Blizzard's equivalent. This indicates that the merger of the two companies mainly will lead to significant reductions for Activision Blizzard, since Microsoft already has high purchasing power. It is with high likelihood that the functional strength of Microsoft's high purchasing power enables the acquisition of Activision Blizzard's necessary assets at a significant discount, especially if using existing suppliers of the company. Furthermore, as both companies are of very similar character, it is natural to assume that they will have very similar investments in technological assets. It may even be that some of the prior investments have been identical in certain computer equipment and software, which now can be avoided. For this reason, it is reasonable to think that this will lead to additional savings in Activision Blizzard's capital expenditures.

Based on the above discussion it is assumed that the merger will provide the new company with savings in Activision Blizzard's future capital expenditures. The savings are equivalent to a 30% reduction in Activision Blizzard's capital expenditures, starting in 2013. Furthermore, since the acquisition will be carried out in 2012 there will also be a 10% reduction in capital expenditures for this year.

### *Financial Synergies*

Financial synergies are mainly related to higher cash flows and favorable changes to the cost of capital (Damodaran, 2005b). An often-cited rationale of M&A transactions concerns the issue of tax benefits, i.e. acquiring a company with operating losses that allows for future tax deductions. Such a financial synergy does not present itself as an opportunity in this merger, as both companies are reporting operating gains. Another way to obtain tax benefits is through an increase in leverage, which in effect changes the cost of capital and decreases the effective amount of tax. As Microsoft and Activision Blizzard combined are able to report higher earnings before taxes and interest it should enable them to take on more debt (Damodaran, 2012b), and it presents the merger as a possible financial synergy. However, the principal reason for the increased debt allowance available does not have its foundation in the merger, but rather that both companies hold unused debt capacity. The reason for this is probably that both companies want to preserve their financial

© Robert Stenmark

flexibility, in a highly competitive environment where the financial situation can be turned upside down within a short time frame. Furthermore, the only reason why Microsoft has increased its leverage over the last few years is to take advantage of the favorable pricing and liquidity of the debt markets (Microsoft Corporation, 2011a). For this reason it is assumed that the merged company values this financial flexibility, and consequently refrains from increasing leverage (debt).

### *Other potential Synergies*

There are also additional synergies that may be realized. However, since the value of these synergies cannot reliably be measured, they will only briefly be referred to in this section.

First, the merger of the two firms will offer Microsoft the opportunity to reduce risks associated with potential volatility in revenues generated in the EDD division. Prior to the merger, Microsoft's revenues from this segment are highly dependent on the future demand for its console and related accessories, i.e. if demand for Microsoft's console (and related accessories) experiences a negative shift, this will be highly reflected in the division's revenues. However, following the merger, the company will also offer products that are related to Sony PlayStation and to Nintendo Wii. Consequently, the potential volatility in earnings will be reduced and the increased exposure will also enable Microsoft to benefit if competitors experience higher demand.

Second, the console manufacturers hold the right to approve and to manufacture games for each respective console (it be internally developed games or third-party games). This indirectly means that "a manufacturer may give priority to its own products or those of competitors in the event of insufficient manufacturing capacity. Accordingly, it could cause unanticipated delays in the release of products as well as increases to projected development, manufacturing, marketing, or distribution costs, any of which could harm [Activision Blizzard's] business or financial result" (Activision Blizzard Inc., 2011a, p. 25). As a consequence of the merger, the approval and manufacturing process for Activision Blizzard games and related promotional material will become smoother. This assumes that Activision Blizzard are informed of what is required to receive approval for certain games, and that they are capable of develop the games and promotional material that complies with these standards. A potential smoother approval and manufacturing process provides the company with increased flexibility, and a shorter time to market. These are capabilities that may be very important in this industry, as products are released at high pace and has relatively short life cycle. Furthermore, it may provide benefits such as increased time at disposal to further develop games prior to their release, more frequent content updates for customers, and the potential to establish a larger base of loyal consumers.

### *Integration and Restructuring Costs*

Restructuring costs cannot directly be identified as a synergy, because it does not provide the company with additional value. However, the restructuring costs are a necessity for the integration of the companies and to realize the synergies that just have been discussed. The restructuring costs will start to materialize immediately as the companies start the negotiations regarding the deal. At this time, costs will be related to the presence of lawyers that help advice the deal and the time management has to spend discussing the deal structure. Furthermore, additional costs will occur

© Robert Stenmark

when the transaction takes place, since investment banks tend to oversee these transactions.

When the transaction is completed and the companies are to be merged there will occur some costs to ensure a proper consolidation of the companies. Without measures to ensure that this happens, the operational efficiency of the merged company might be affected. This includes analyzing the structure of the new company, eliminating redundant positions that affect efficiency, retaining existing talent, combining existing reporting systems and realigning cultures to fit the overall image of the new company. All of these actions yields costs that are directly associated with the merger of the companies, and that has to be taken into account when considering the company with its potential synergies.

When the merger between Activision and Blizzard took place in 2008, this was performed through a reversed acquisition, i.e. Blizzard as a private company bought currently public Activision in order to bypass the process of publicly listing the company. After the transaction Blizzard was consolidated into Activision. The consolidation required a restructuring of the company equivalent to 8.6% of Blizzard's revenues for 2007 (Activision Blizzard Inc., 2008). The restructuring charge was charged to the income statement with 80.2% and 19.8%, for 2008 and 2009, respectively. In Microsoft's acquisition of Activision Blizzard we should observe a similar pattern for the percentage of restructuring costs and for the allocation to the income statement. However, due to the higher restructuring charge associated with this acquisition, it is charged to the income statement over *three* years following the transaction with 60%, 30% and 10%, respectively.

It should be noted that Microsoft is an experienced acquirer with over a hundred past-acquisitions. The past experience with integration of these companies may have provided Microsoft with skills that enable them to realize the integration of Activision Blizzard at a lower cost than estimated above. However, without having any internal or private information to base a potential cost reduction on, it is assumed that 8.6% of Activision Blizzard's revenues is a reliable estimate.

### 7.2.2 Value of Synergies

Having outlined all the assumptions for the potential synergies that can be achieved by the merged company, it is now possible to implement them into the existing valuation model using the same valuation parameters (risk free rate, market risk premium etc.). The new value obtained in the model includes the value of the synergies, and their value-added can be found by subtracting the enterprise value without synergies (see Appendix 18 for the valuation results).

In order to properly analyze the effect and value of each synergy, they have been implemented into the valuation model on an individual basis. This way the isolated effect of each synergy will be obtained, and it provides a more complete overview of the synergies. Subsequently, all synergies have been included in the model to find the total value of synergies, and their net effect after restructuring. Table 24 summarizes the resulting synergies that are expected from the merger of Microsoft and Activision Blizzard.

The total value of all synergies is estimated at $11.7 billion, after taking into the account the expenses related to restructuring. In absolute terms this may appear as very high, but compared it to the theoretical value of the merged company ($357.1 billion) it only corresponds to a 3.3% increase in enterprise value. The reason for the low percent to total enterprise value can mainly be ascribed to the large value of

Microsoft. Compared to Activision Blizzard, the synergies amounts to 109.7% of the enterprise value, which reveals that the effect is in fact significant.

**Value of the Synergies**

| | Value of Synergy | Enterprise Value with Synergy | Enterprise Value without Synergy |
|---|---|---|---|
| Revenue Synergies | | | |
| Product Bundling | 1,487 | 358,621 | 357,134 |
| Distribution by Activision Blizzard | 2,433 | 359,567 | 357,134 |
| Cost Synergies | | | |
| Distribution by Activision Blizzard | 155 | 357,289 | 357,134 |
| Reduction in Approval Expenses | 101 | 357,235 | 357,134 |
| Manufacturing Discount | 866 | 358,001 | 357,134 |
| R&D Savings | 1,071 | 358,205 | 357,134 |
| Cross-Marketing Efforts | 1,206 | 358,340 | 357,134 |
| Reduction in General and Administrative | 4,383 | 361,518 | 357,134 |
| Working Capital Synergies | 19 | 357,153 | 357,134 |
| Capital Expenditure Synergies | 277 | 357,412 | 357,134 |
| **Total synergies** | **11,999** | **369,130** | **357,134** |
| Restructuring | 298 | | |
| **Synergies Net of Restructuring** | **11,701** | **368,835** | **357,134** |

*Table 24: Value of the Synergies*

A more focused analysis reveals that most of the value is created through synergies that are associated with lower costs (see Figure 37 on next page for a full overview of the distribution of synergies). In fact, the cost synergies account for 64.9% of the total synergies that they are expected to realize. This was not unexpected as cost synergies are related to factors that the company has a direct influence over. The cost synergies with the largest effect on value are the R&D savings, the cost reduction of cross-marketing efforts, and the large cutbacks on general and administrative expenses. All of these are related to the operational activities of the two companies and build on the functional strength of each respective company.

Synergies related to revenues are harder to realize because they are affected by competitors' and consumers' reaction to the merger (Sirower & Sahni, 2006). However, the merged company is still able to capture a significant proportion of the value through revenue synergies (32.7%). This can mainly be ascribed to the transfer of the distribution contract to Activision Blizzard, a decision that is largely unaffected by both consumers and competitors. Moreover, the synergies associated product bundling will be affected by external factors and is consequently expected to account for a lower proportion of the expected total synergy value.

The remaining synergies account for only 2.5% of the total value creation, but they pose improvements that more effortlessly can be realized. All things considered, they yield very high value compared with the time invested to get the necessary adjustments in place.

The last element of the synergies is the expenses related to restructuring the merged company. The total restructuring expense is $298 millions, and represents 2.5% of the total synergies. This may appear as an unnecessary cost, but considering

that it enables the generation of synergies totaling $11.7 billion clearly demonstrates its importance.

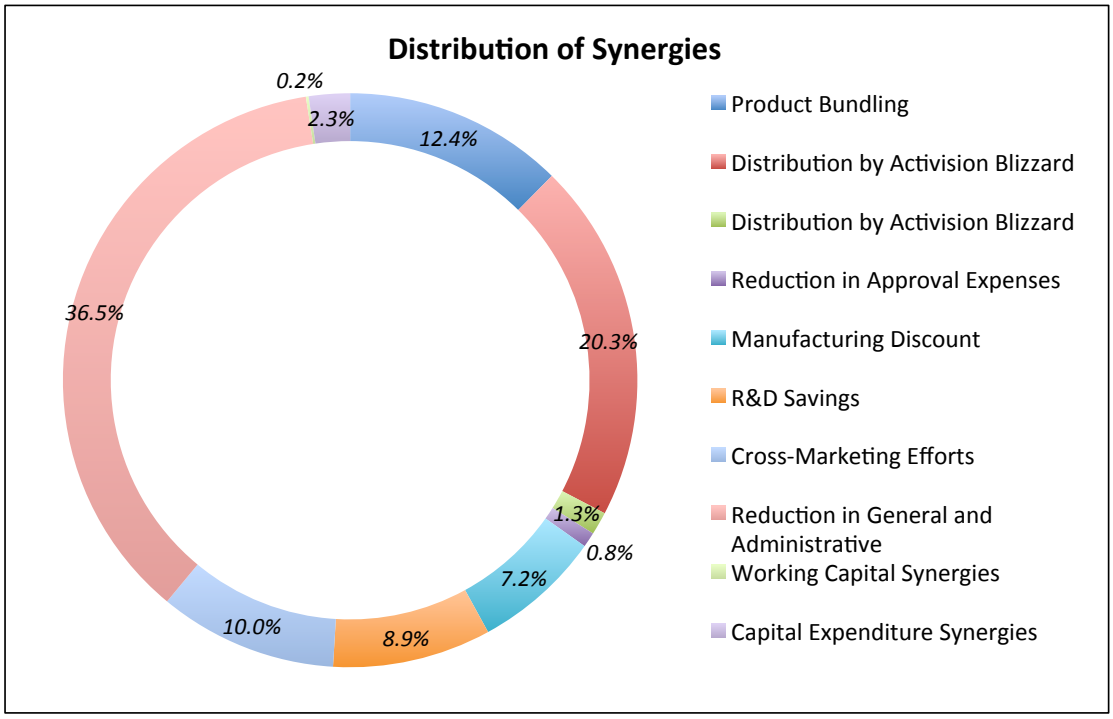



*Figure 37: Distribution of the Synergies Created in the Merger*

### 7.2.3 Distribution of the Synergies

In the literature review it was pointed out that the synergies should be fairly allocated to both of the companies in the acquisition. In order to fairly allocate the synergies, they should be shared on a basis that reflects the unique strengths that each of the companies brings to the merged company.

It should be noted synergies of a general nature, which can be realized with other companies, theoretically should provide the target with a larger share of these synergies. However, for Activision Blizzard to capture a larger share of these general synergies, they will be required to open a bidding process for the company. The other bidding companies will then assist in pushing the price up, and consequently awarding Activision Blizzard with the proportion of synergies that they worthy of. Since the expected competition in a potential bidding situation is limited (discussed more in detail later on), it is reasonable to assume that Microsoft will try to reap some additional synergies that under competing conditions would have been distributed to Activision Blizzard.

The distribution of synergies is illustrated in Figure 38, and is based on the discussion above. This means that it is assumed that both companies are fully awarded for the unique strengths they bring to the merger, while the synergies that are of a general nature are divided equally.

Most of the synergies created in the merger are enabled through the functional strength of Microsoft, which consequently is awarded with a higher share of 68.5% of the net synergies. Activision Blizzard is awarded with a lower share of 31.5%, which is equivalent to $3,690 millions in synergies. The value of these synergies represents a significant 27.4% of its theoretical equity value.

© Robert Stenmark

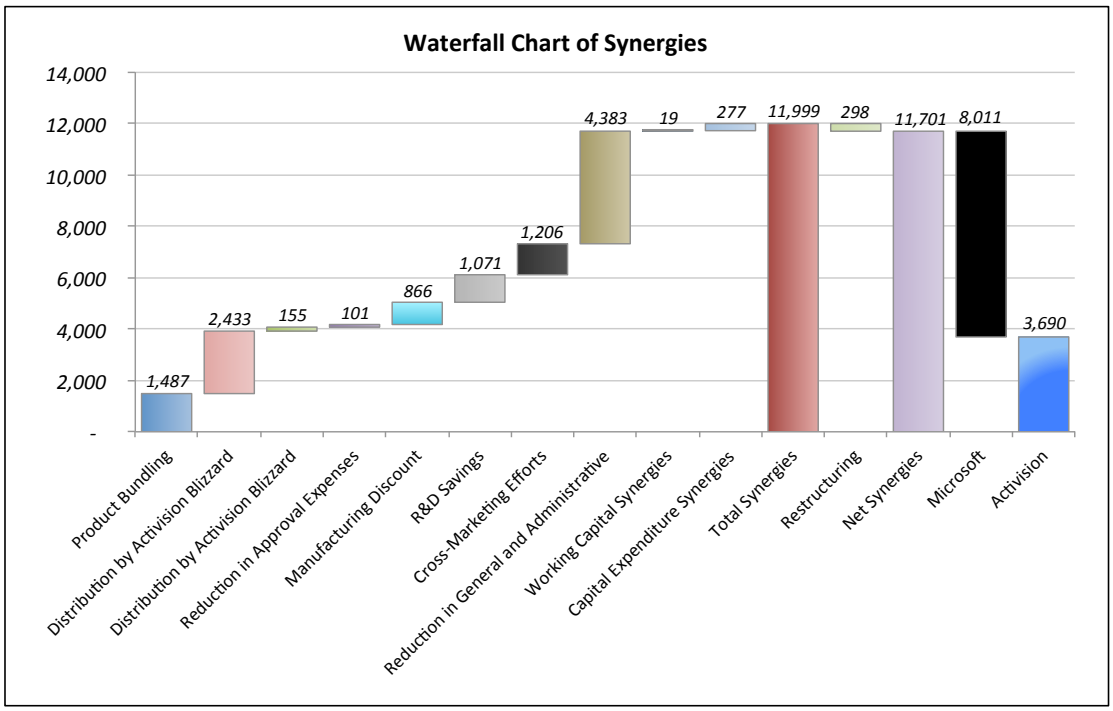



*Figure 38: Waterfall Chart of Synergies*

# 8. The Acquisition

The acquisition process is an intricate process, and involves a whole range of steps necessary to complete the transaction. For this reason, no acquisitions are identical and the outcome depends on the preparations carried out prior to the transaction, the execution of the transaction, and the company's ability to follow through on the intended improvements that ultimately creates value. This section will reflect on these issues to provide the reliable structure for the potential acquisition.

It will be assumed that Microsoft will carry out the acquisition with the intensions of horizontally merging Activision Blizzard with its Entertainment and Devices division. The purposes of the merger are a strengthening of the division's importance for Microsoft, and an increase the overall growth opportunities for the company. Furthermore, due to the high popularity of Activision Blizzard's game titles it is assumed that the company name will be used as a brand name in Microsoft's product portfolio post-merger.

## 8.1 Classifying the Acquisition

Microsoft intends to merger the Activision Blizzard with its Entertainment and Devices division. For this reason, there are two options available to Microsoft on how to carry out the acquisition. They can either choose to approach the board of directors at Activision Blizzard by pursuing a direct merger, or approach the shareholders directly through a tender offer. The main difference for Microsoft will be that the price in a tender offer will tend to be slightly higher, and that it may encounter shareholders that are unwilling to sell. However, since these shareholders tend to fall for the pressure in the long term, this does not pose as a significant threat for Microsoft.

As the situation is now, Vivendi S.A (Vivendi) holds the majority of shares in Activision Blizzard. The large stake of Vivendi enables them to control many of the decisions made by the board of directors. This means that the decision on whom to approach should be indifferent for Microsoft. However, it will be assumed that Microsoft will be exposed to larger resistance if approaching the board directly, compared to approaching only the shareholders. They will for this reason gain from approaching the shareholders directly. Furthermore, it is very likely that Vivendi will sell their shares if they receive a good compensation for their investment. The reasoning behind this is that a potential sale will provide Vivendi with a more focused portfolio of product, as the company currently has extensive focus on mass media, music and telecommunication.

In order to realize the discussed synergies it is essential that Microsoft is able to acquire a proportion of the company that allows for a merger (business combination) of the two companies. According to SEC, a merger can only occur if the business acquisition is probable. There are several guidelines for what is considered probable, and "the assessment of probability requires careful analysis of facts and circumstances" (Deloitte, 2009, p. 9). Due to the extent of these guidelines, they will not be discussed in length in this paper. However, an acquisition is frequently considered probable of the percentage ownership exceeds 50% (Deloitte, 2009). Thus, if Microsoft is unable to convince all shareholders to sell, it will be sufficient to acquire only the proportion currently held by Vivendi to enable the merger.

© Robert Stenmark

## 8.2 Other Potential Bidders

When Microsoft approaches Activision Blizzard to present their offer, it is important to be aware that there may be other companies ready to show their interest in the company. These companies include other third-party publishers and console manufacturers. They may place counter-bids that threatens the intended deal and should for this reason be considered when determining Microsoft's initial offer.

First, the third-party publishers may see economies of scale and large benefits from knowledge sharing in a potential merger with Activision Blizzard. These companies are characterized by their humble size, and their lack of financial flexibility to finance such a large transaction. For this reason, they pose as little threat individually, but they may submit a joint offer that can be a threat to Microsoft's intended offer. However, considering the slim margins in the industry and the time necessary to assemble the required capital for a potential bid, such an offer would probably appear unfeasible for most third-party publishers.

Second, there are the console manufacturers, which are direct competitors of Microsoft. These companies may be interested in bidding for Activision Blizzard for exactly the same reasons as Microsoft. On the one hand, Nintendo currently has little debt and high cash reserves that might pose as a threat in a potential bidding situation. However, recent financial difficulties in the company and negative reported operating results significantly reduces the likelihood of a threatening counter-bid from Nintendo. On the other hand, there is Sony, a company very similar to Microsoft in many aspects. Sony has large cash balances and could potentially afford to submit a bid that could win in potential bidding situation. However, it is unlikely that this would happen, considering that the company currently holds large amounts of low-rated debt (BBB+) and have reported operating losses over the last three years. By placing a potentially higher bid than Microsoft, Sony will drastically reduce its financial flexibility and may even jeopardize the future of the company. For this reason, it is reasonable to assume that a bid from any of Microsoft's direct competitors is less likely.

Considering the general position of the other potential bidders, it seems unlikely that they will endanger Microsoft's initial offer. Nevertheless, if a counter-bid were to be presented, Microsoft is positioned as a strong candidate in a potential bidding war. The mere size of the company may scare of other companies interested in bidding for the company. In addition to the large amount of synergies that it expects to realize, it has access to considerable amount of funds to finance the acquisition.

## 8.3 The Acquisition Price

Since the acquisition will be carried out as a tender offer, Microsoft needs to identify a specific price that will be communicated to the shareholders of Activision Blizzard (Damodaran, 2002). Moreover, as Vivendi owns such a large stake in the company, it is also advisable to approach Vivendi directly to present the offer. This provides Microsoft with an increased likelihood of a successful acquisition of the necessary shares.

Furthermore, it is desirable for Microsoft to offer a price that is perceived as a friendly proposal. The purpose of this is to indirectly communicate to the shareholders and stakeholders that Microsoft intends to acquire the company in order to attain Activision Blizzard's greatest potential. For the proposal to be perceived as friendly,

© Robert Stenmark

the offering price needs to be higher than the traded price, but not too high as perceived as a hostile bid.

The above allocation of the distributed synergies is based on the fact that Microsoft receives somewhat more synergies compared to a perfect competitive situation. Consequently, when offering Activision Blizzard a premium equal to the synergies it is allocated, Microsoft will in fact pay a price that is lower than its reservation price. This proposal will be perceived as more friendly to the existing shareholders.

Over the last year, Activision Blizzard's average market capitalization has been $13,240 million. This is a value that is slightly lower than the theoretical value of $13,447, which signalizes an upside potential of 1.5% for the company. When structuring the bid based on the theoretical value and adding a premium for the synergies that it creates, yields an effective offering price of $17,137 million, or $14.93 per share. This creates an effective premium for Activision Blizzard of 29.4%.

**The Acquisition Price**

| (in millions dollars, except percentages) | |
|---|---|
| Activision Blizzard | |
| Average Market Capitalization 2011 | 13,240 |
| Equity Value | 13,447 |
| Value of Synergies | |
| Attributable to Activision Blizzard | 3,690 |
| (in percent) | 31.5% |
| **Acquisition Price** | **17,137** |
| **Premium** | |
| To average Market Capitalization | 29.4% |
| To Equity Value | 27.4% |

*Table 25: The Acquisition Price*

It is important to consider that Microsoft's current shareholders will only accept the decision of acquiring Activision Blizzard if they perceive that the transaction provides future value for the company. For this reason, it is essential to analyze the value that is created through the eyes of the shareholder.

The value that is created for the acquiring company's shareholders can be calculated using the formula presented in the literature review, and for the purpose of analysis restated below.

$$\begin{aligned} Value\ Created\ for\ Acquirer = (&Standalone\ Value\ of\ Target + \\ &+ Value\ of\ Performance\ Improvements) \\ &- (Market\ Value\ of\ Target \\ &+ Acquisition\ Premium) \end{aligned}$$

On the one hand, assuming that all the potential synergies will be realized, yields a value for Microsoft's shareholders of $8,011 million, identical to the synergies that are attributed to the company. Compared with the theoretical value of the Microsoft this is equivalent to an increase in the equity value of 2.4%. On the other hand, if the expected synergies turn out to be non-existent, the premium of

$3,897 million paid for Activision Blizzard will transform into a direct loss for Microsoft's shareholders. This loss will lead to a reduction in the equity value of 1.2%. These calculations unveils that the there is a higher upside potential compared to the downside potential, which in effect yields a positive expected value for shareholders if both situations are equally likely. Moreover, as Microsoft is an experienced acquirer and has dealt with integration of companies before, it is likely that the resulting value created for shareholders will be positive. Consequently, it is reasonable to assume that the shareholders will accept the decision to acquire Activision Blizzard, and that Microsoft can proceed with the acquisition.

## 8.4 Can the Premium Be Justified?

In order to proceed to other considerations about the deal structure, it is important to perform a sanity check on the premium that is decided on. The *Meet the Premium* line, outlined in the literature review, provides a good framework to analyze if the offering price is sensible in relation to various combinations of synergies. Moreover, the model allows for a graphical representation of the findings, which can be used to enlighten and guide the hard decision on the acquisition premium.

The framework is based on theory of accretive acquisitions, and assumes that the given cost- or revenue synergies must be fulfilled immediately and then maintained in perpetuity. In the application of the framework, the following equation is employed to the identified premium of 29.4% (see Appendix 19 for how the formula is derived).

$$\%SynC = \frac{\Pi}{1-\Pi} \cdot (\%P - \%SynR)$$

The identified premium for the acquisition suggests that the merged company must realize at least 9.6% of cost synergies in order to be justified. It is also possible to justify the premium with revenue synergies only; however, this requires a percentage of synergies equal to the intended premium. For this reason it is clear that cost synergies are more preferable, as it involves lower uncertainty and a much lower percentage of synergies are needed to justify the premium.

In order to check if the synergy mix of the merger is sufficient to justify the intended premium, it is necessary to calculate the synergies' overall significance. The calculation of the significance of the synergies was performed in three steps. First, the annual percent of revenue (cost) synergies was calculated on the basis of total revenues (cost) of Activision Blizzard. Second, the percentage of revenue (cost) synergies was discounted back at the weighted-average cost of capital, to reflect the time value of money. Third, the relevant percentage for the given synergy was assumed to be equal to the average percentage of the forecasted period. The synergy mix for Microsoft's intended acquisition of Activision Blizzard is illustrated by the blue dot (A) in Figure 39.

© Robert Stenmark

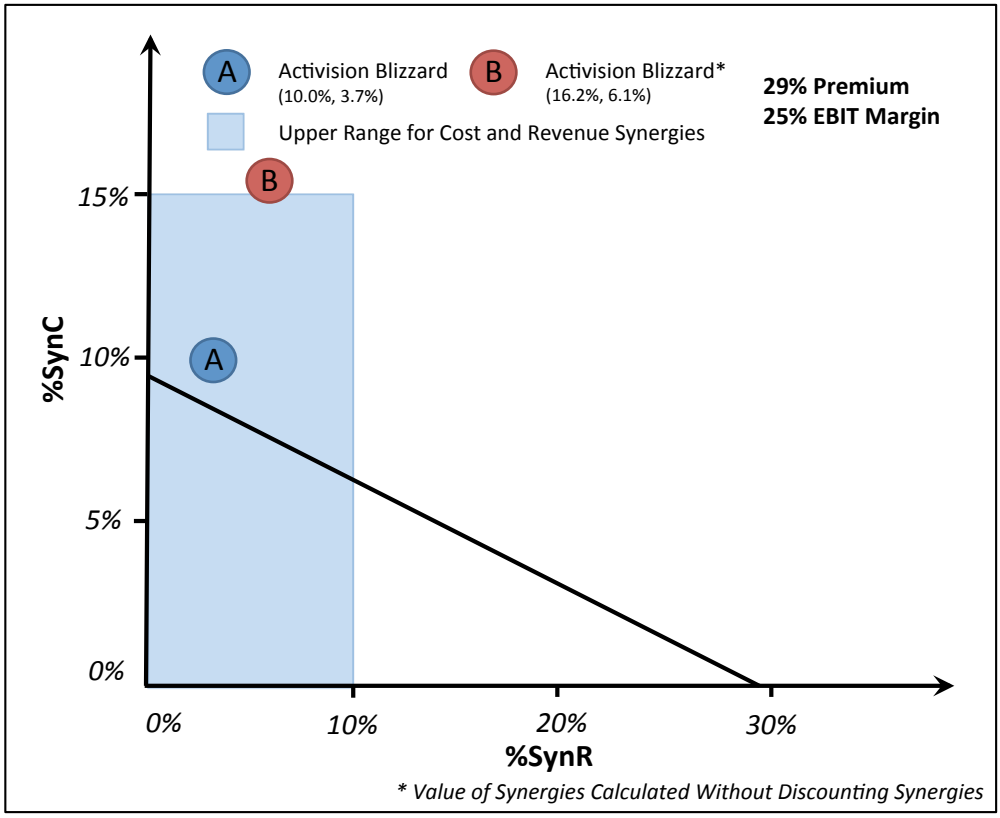



*Figure 39: The Meet the Premium (MTP) Line for Microsoft's Acquisition of Activision Blizzard*

For simplicity, one could have chosen not to discount the future synergies back to current levels, and the figure would look much more appealing for shareholders of the firm (illustrated by the red dot (B) in the figure). However, by doing that, the time value of money neglected. In other words, the premium is paid today, and the benefits are collected in the future, the benefits should for this reason be discounted back in order to carry out a reliable comparison.

The maximum plausible cost and revenue synergies are assumed to be at levels that are similar to the undiscounted values of the synergies. This provides the synergies with a sensible range of possible outcomes if the synergies were to change in the future. This range is illustrated in the figure by the light blue box.

The result of the analysis places the synergy mix of the merger of Microsoft and Activision above the Meet the Premium line, and within the box of plausible outcomes. Consequently, the intended premium appears as sensible.

Finally, the implied maximum premium has been calculated to examine how much the premium could be increased *if* Microsoft's initial offer is rejected (see Table 26). The implied premium was obtained using the formula stated on the previous page, inserting the discounted percentage synergies. First, since revenue synergies are of a very uncertain nature, it may well be better to assume that these will not be realized in the future when calculating the implied premium. The results indicate that with only cost synergies in place, Microsoft will be able to increase its premium by 1.3 percentage points. Second, if the relevant revenues synergies are included, the premium can be increased to 34.4%.

| Implied Maximum Premium with Current Synergies | |
|---|---|
| (in percent) | |
| Impled Premium | |
| Considering Cost Synergies Only | 30.7% |
| Considering Both Cost and Revenue Synergies | 34.3% |

*Table 26: Implied Maximum Premium with Current Synergies*

It is noteworthy to mention that the framework applied in this section only considers synergies related to revenues and costs. Hence, the synergies related to working capital and capital expenditures in the merger of Microsoft and Activision Blizzard are not included in the analysis. This suggests that the maximum premium that can be offered is slightly higher than 34.3%.

## 8.5 Financing the Acquisition

The necessary information to approach the shareholders of Activision Blizzard has now been established, and the intended premium suggests that Microsoft can proceed with its proposal. However, before the offer can be presented, the financing mix for the transaction needs to be determined.

A short analysis of Activision Blizzard's average market value reveals that the company is underpriced by approximately 1.5% compared to its theoretical value. This poses as a good opportunity for Microsoft, as they will be investing in a company that is offered at a discount. When considering the synergies that are expected, the premium they intend to offer and the potential appreciation in value, the investment will yield an overall positive return for Microsoft. Ultimately, the return will *also* be highly affected by how Microsoft finances the acquisition.

One of the principal decisions in financing the transaction is the choice between debt and equity. Moreover, if equity is the preferred over debt, it must be determined whether the deal should be financed by cash or stock, or a combination of the two.

As stressed earlier, it is reasonable to think that Microsoft wants to limit the amount of debt they take on, in order to maintain their financial flexibility. Moreover, the company's superior rating and the favorable pricing in the debt market are the foremost reason why the company has issued debt. That is to say, the company has not necessarily needed additional funds, but has used it as an opportunity to lower the total cost of capital. However, this does not mean that the company is unable to issue more debt. On the contrary, Microsoft possesses many of the characteristics needed to issue substantial amounts of debt to finance a potential acquisition. Considering that Microsoft is one of *five* companies in the world with a rating of AAA (The New York Times, 2011), the company is likely to withstand significant amounts of debt before it risks a downgrade of its bonds to junk status (below BBB). On the basis of the initial part of this paragraph it is assumed that Microsoft considers debt financing as an unfeasible alternative for the acquisition.

As equity is the preferred capital for Microsoft, the relevant follow-up question is if the company wants to proceed with cash or stock, or both. The choice between the two can highly affect the return on the deal. While cash deals are predominantly associated with positive returns, stock deals often tend to realize

negative returns. The reason for the low returns in stock deals is frequently associated with the tendency for companies to utilize stocks when the company is overvalued in the market.

In Microsoft's case, the market value of stock is undervalued by 30% compared to the theoretical value of the company. This leads to suggest that an acquisition using stock may not be such a wise decision, as it may convey to the market that the company considers the stock to be overvalued. Consequently, the stock may experience an immediate negative shift after the announcement of the acquisition, i.e. destroy value. Moreover, a stock deal also seems undesirable if Microsoft's value suddenly were to rise. In this scenario, the premium paid for Activision Blizzard would indirectly be higher, and the target shareholders receives a higher effective price.

Most the evidence presented points toward a pure cash transaction. A cash transaction will provide Microsoft with a tool to communicate to the market that it has confidence in the potential synergies, and that it is willing to carry all risks concerned with the realization of these. This is usually a good sign in a transaction, and is consequently valued by the shareholders. Moreover, the most convincing argument for the use of cash lays in the history of Microsoft, more precisely its acquisition history. Over the last few years Microsoft have executed several acquisitions of other technology companies, all of which have been financed by cash. The most recent example is Microsoft's acquisition of Skype, which was an all-cash transaction of $8.5 billion.

The above discussion and facts presented argues for a cash-only transaction in order to acquire Activision Blizzard. This is a decision that will yield value for both Microsoft and its investors, and the potential negative effects associated with stock deals will be avoided. Moreover, the company has the cash reserves necessary to fund a large transaction using its cash and cash equivalents, and by eliminating some of its short-term investments in marketable securities.

## 8.6 The Initial Offer

All the needed information to proceed with the offer is now in place. Microsoft will approach the shareholders with the intensions of expressing that a potential merger will provide Activision Blizzard with leeway, and the freedom to pursue its highest potentials through the increased financial flexibility provided by Microsoft. In addition, the merger enables the integration of two strong brands that together can revolutionize the software entertainment industry. Moreover, it is also important that Microsoft emphasizes that there are established clear restructuring plans for the merger, and that will be followed through. This presentation to the shareholders is critical, as it will determine if they will sell or not.

Finally, Microsoft will present their tender offer to the existing shareholders of Activision Blizzard. The total price offered for the acquisition of all shares in the company will be $17,137 million, corresponding to $14.93 per share. And as the acquisition history of Microsoft suggest, the transaction will be entirely financed by cash.

## 8.7 Other Considerations

This section will briefly discuss some important issues should be taken into consideration in the acquisition of Activision Blizzard. If Microsoft fails to reflect on

these issues, the acquisition may not be as successful as intended and ultimately hurt the shareholders of the company.

### 8.7.1 Winner's Curse

Even though competing companies seem less likely to present offers to acquire Activision Blizzard, a competing offer could be offered from companies that are not seen as direct threats. If this were to occur, it is important that Microsoft carefully examines the other bid(s) and takes it into consideration if they decide to increase their offer. The reason for this is that if the other bid is neglected, Microsoft *may* win the bidding war by winner's curse. In other words, the reason why Microsoft wins is that it is the company that has overestimated the potential synergies the most, i.e. overpaying for the target.

The winner's curse assumes that all estimates for the bids are contingent on a certain degree of subjectivity, i.e. the bids will tend to have different value estimates for the company in question. Moreover, since the value of the company should be roughly the same for all bidders, it is assumed that the average of all bids is the most accurate value for the target. That means that the companies that bids higher than the average value will tend to lose.

Winner's curse can be avoided by taking other bids into consideration *before* proceeding with a higher bid. This means that the competing bid is compared with the intended higher bid to check for potential overestimations of value. Since Microsoft has a lot of expected synergies, they may be provided with a higher threshold for its bids. Nevertheless, potential competing offers should still considered, in order to be certain that its synergies are not overly estimated.

### 8.7.2 Execution Risk

It should be noted that an acquisition is not a one-shot decision, but a decision that takes place in several stages and that requires in-debt evaluations throughout the process. In all the stages of the process, the acquiring company will be faced with some degree of risks of execution. The company's ability to reduce and manage these risks can determine if the company will be capable of successfully completing the transaction.

The risks already starts early in the process when the due diligence is initiated on the target. At this time, expert opinions and thorough company analysis are elements of high importance. Initial risks include the focus of the acquisition, and considerations related to the transaction.

When the initial assessment is performed and the companies are ready to announce the merger, other risks appear. The risks are now more related to how the companies are expected to operate after the merger. Issues that are likely to appear are how the leading roles of the two companies should be brought together, responsibility areas for the companies after the merger, and how the operations should be carried out to reflect the new image of the company.

The final stage is concerned with the actual merger of the two companies, where proper integration of the two companies must be given extra attention. At this stage it is important to reconcile the two existing cultures and make sure that procedures are realigned to perform as efficiently as possible. Additionally, the execution of the restructuring plans needs to start in order to initiate the synergy realization.

© Robert Stenmark

After the final stage is completed and the companies have been fully merged, the company still faces some risk. As this is the period when the synergies are to be realized, the risks are concerned with following through the intended synergies. To reduce these risks, continuous evaluations of the restructuring plans are essential. If the restructuring fails to realize its full potential, the plans needs to be reassessed and adjusted in order to ensure that the forecasted value is captured.

All of these stages are important to have in mind when carrying out an acquisition. Without proper focus these risks, they may become out of control and cause difficulties for the acquirer. If they were to become too high, the acquirer can incur significant costs that ultimately lead to abandonment of the deal.

© Robert Stenmark

# 9. Conclusion

Mergers and acquisition are a phenomenon that has existed for over a hundred years. It has enabled companies to pursue additional growth opportunities, when the organic growth has slowed down. The ideal picture of a successful acquisition is characterized by the ability to create additional opportunities that otherwise would not be possible, employ resources more efficiently, and ultimately, create value for the shareholders. However, the undertaking of such transactions has often been argued to be a loser's game, and that it is eventually the shareholders suffers from these decisions.

Microsoft has for long pursued a strategy of acquiring companies in the attempt to succeed in achieving the ideal picture of an acquisition. Their strategy builds on acquisitions of companies to enable the creation of additional growth and to preserve technological leadership in their industry. By obtaining control over Activision Blizzard, Microsoft will comply with the overall strategy, and will increase their focus in the entertainment software industry. Moreover, the acquisition will also allow for a natural expansion of Microsoft's current product portfolio.

The potential merger of a console manufacturer and a game publisher present itself as a way to create valuable opportunities that otherwise would not be possible. The opportunities, or synergies, that potentially can be created will especially apparent in the day-to-day operations of the merged company. This is due to the similarity of the functions that are performed in the two companies before the merger.

The expected synergies in revenues are few, but have the potential to add considerable value. These opportunities build on the functional strengths of the two companies and their brands. The value from these improvements is enabled through increased product bundling and transferral of Microsoft's European distribution contract to Activision Blizzard.

As costs can more reliably be measured and controlled by the management, it presents greater opportunities for realizing substantial value through these synergies. Although there are many areas in which cost synergies provide value, the most valuable synergies are related to research and development, sales and marketing, and general and administrative. These are all areas that build on the core operations of the companies, and where they possess the distinctive expertize that have enabled their past success.

Since the close interaction between the two companies enables the creation of the above opportunities, the synergies are distributed based on the unique strengths that they bring to the merged company. As Microsoft's substantial size and functional strength enables most of the synergies, it is awarded almost two-thirds of the value created. Although Activision Blizzard is only allocated about one-third of the total value that is created, it is still considered substantial amount compared to its overall enterprise value.

With the intension of acquiring Activision Blizzard, Microsoft will approach the company's current shareholders and present a tender offer proposal. And in order to increase the likelihood of successfully realizing the intended acquisition, Microsoft will also directly approach the largest shareholder, Vivendi. The shareholders will be presented with a price that is equal to the theoretical value of the company in addition to a premium that is equal to the synergies that the company is awarded. Moreover, the acquisition will be financed with a cash-only transaction, as to maintain financial flexibility and in line with Microsoft's acquisition history.

© Robert Stenmark

# 10. Appendices

## Appendix 1: Company Information and SWOT Analysis

**Brief Company Information: Microsoft Corporation**

**General Information**

| | |
|---|---|
| Name: | Microsoft Corporation |
| Origin: | United States |
| Founded in: | 1975 |
| Industry: | Software Publishing (NAICS: 511210), Custom Computer Programing Services (NAICS: 541511), Audio and Video Equipment Manufacturing (NAICS: 334310), All Other Telecommunications (NAICS: 517919) |
| Ticker: | MSFT (NASDAQ) |
| Web Site: | www.microsoft.com |
| Competitors: | Apple, Google, Yahoo!, IBM, Adobe, Sony, Nintendo, Linux, Oracle, etc. |

*"..[Microsoft] develop[s] and market[s] software, services, and hardware that deliver new opportunities, greater convenience, and enhanced value to people's lives"*
*- Annual Report MSFT 2011*

**Key Financials and Non-Financials for 2011**

| | |
|---|---|
| Revenues: | US$ 69,943 million |
| Net Income: | US$ 23,150 million |
| Assets: | US$ 108,704 million |
| Debt: | US$ 11,921 million (Long-Term) |
| EPS: | US$ 2.73 (Basic) |
| Employees: | 90,000 |

**Well-Known Products**

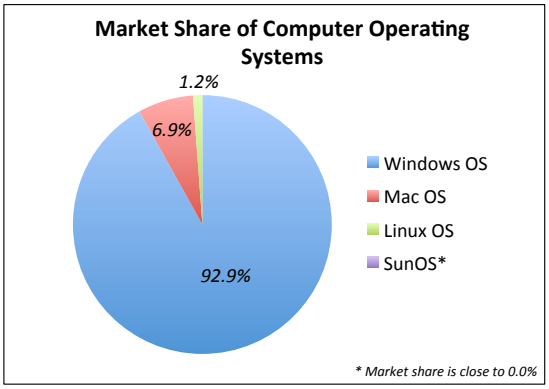
Windows Operating System
Microsoft Office / Office 365
Bing web search engine
Xbox 360 and Kinect
Microsoft SQL Server

*Based on information from (Microsoft Corporation, 2011) and NAICS codes from (EBSCO Publishing, 2012).*

Microsoft Corporation is recognized as a worldwide leader in software, services and solutions that help people and businesses realize their full potential (Microsoft Corporation, 2012a). They desire to create "technology that transform the way people work, play and communicate" (Microsoft Corporation, 2011a, p. 8).

Microsoft was established in 1975 in the United States and started its voyage when entering the computer programming industry. Its early success was a result of a release of a highly popular operating system for computers. It has since then executed over a hundred acquisitions (Microsoft Corporation, 2012b) and developed a diversified product portfolio.

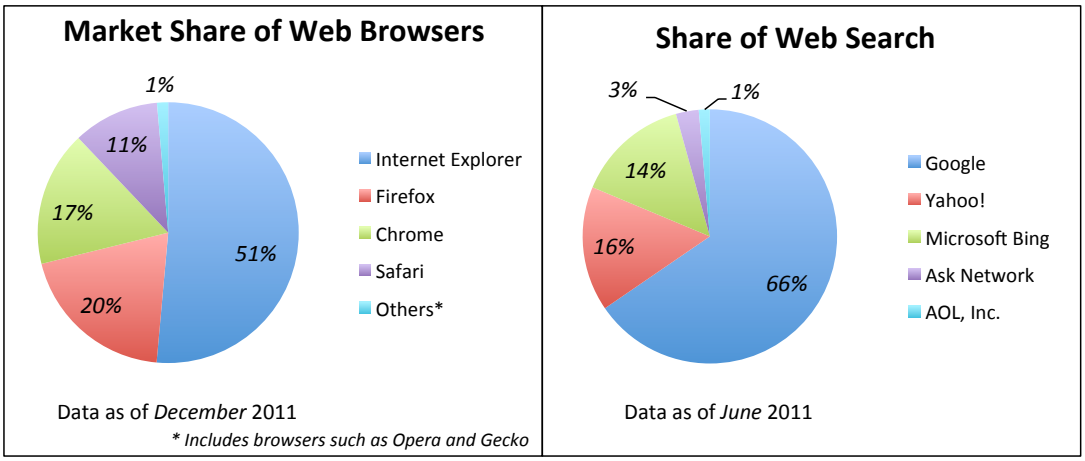
The company currently operates in five distinct segments, which all have their own dedicated division. Its *Windows & Windows Live Division* (Windows Division) serves the market for computer operating systems with its associated software and services. In this segment Microsoft has significant market share, as can be seen in the following pie chart.




Based on information from (Net Market Share, 2012)

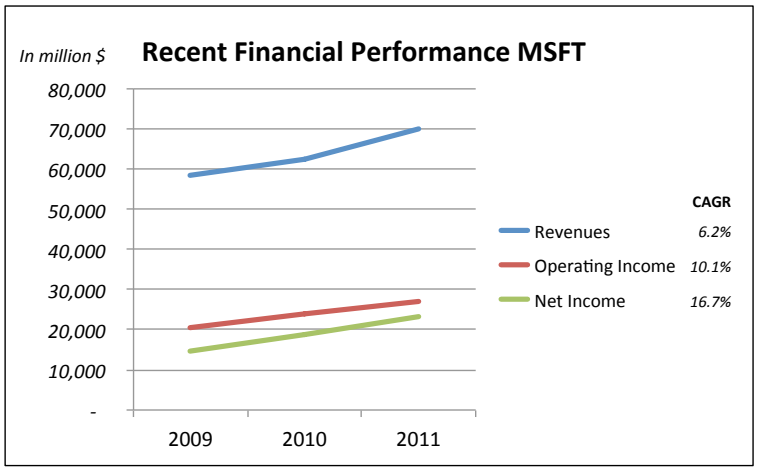
Services that improve productivity and efficiency are provided through the *Server and Tools Division* (STD), which markets server operating systems and cloud-based services. IDC (2011) announced that in the second quarter of 2011, Microsoft's revenues from servers represented 45.5% of the quarterly revenues market, which provides some perspective on Microsoft's current market share. In terms of cloud services, Microsoft has increased its focus and offers multiple services in this segment (e.g. Office 365, SkyDrive).

Furthermore, the *Online Services Division* mainly provides the online search engine Bing, and services for advertisers to attract customers. The most relevant market share in this segment is mainly Bing, albeit it has struggled competing with the leading search engine provided by Google. As of this reason Microsoft and Yahoo! have formed an alliance to increase their competitive position.




*Based on information from (Stat Owl, 2011)* *Based on information from (TechFlash, 2011)*

The *Microsoft Business Division* (MBD) provides computer productivity tools such as the Office suite for professionals and consumers. A substantial amount of the revenues in this department originates from the Office suit, since Microsoft is the market leader in this segment (Fildes, 2010). The final division is the *Entertainment and Devices Division* (EDD), which offers products meant to entertain people. Its prime products are the video game console Xbox 360 and associated products (Kinect, games etc.), Windows phone, and Mediaroom. This division is discussed at a larger scale in the main body of the paper.




*Based on information from (Microsoft Corporation, 2011)*

| SWOT Analysis – Microsoft Corporation (MSFT) | |
|---|---|
| **Strengths**<br>• Well-known brand by most consumers<br>• Long track record<br>• Wide portfolio of products for both professional and personal use<br>• Delivers a complete and integrated set of products to users<br>• Offers cloud-services<br>• Many patents, and pending patents<br>• Globalized company<br>• Executed strategic acquisitions and partnerships with key companies<br>• Extensive focus on R&D | **Weaknesses**<br>• A handful of game titles account for most of the revenues<br>• Highly cyclical demand<br>• Exposed to movements in foreign exchange rates and interest rates<br>• Has not established a large user-base for its new Windows Phone segment<br>• Pre-installed software is a large part of their operating business<br>• Development costs are upfront and represents sunk cost<br>• Declining market share of web browser |
| **Opportunities**<br>• New growth in software and applications for mobile devices<br>• Opportunities to further develop cloud-based solutions<br>• Deliver a unified entertainment experience across multiple devices<br>• Strategic investments to obtain long-term growth in the company<br>• Development of a the next generation entertainment console<br>• Consumers increased use of multiple devices | **Threats**<br>• Strong competition from other service providers that provides open-source software and cloud services<br>• Apple is becoming increasingly popular<br>• Demand for products are strongly correlated with the macroeconomic factors<br>• Frequency of technology changes are becomes increasingly fast-paced<br>• Piracy of products<br>• Lawsuits from software developers etc.<br>• Loss of reputation due to actions performed by associated companies |

*Based on information from (Microsoft Corporation, 2011)*

**Brief Company Information: Activision Blizzard Inc.**

**General Information**

| | |
|---|---|
| Name: | Activision Blizzard, Inc. |
| Origin: | United States |
| Founded in: | 2008 through the merger of Activision (1979) and Blizzard Entertainment (1991) |
| Industry: | Software Publishing (NAICS: 511210) |
| Ticker: | ATVI (NYSE) |
| Web Site: | www.activisionblizzard.com |
| Competitors: | Sony, Nintendo, Microsoft, Sega, EA Games, Take 2 Interactive Software, Konami, Capcom, Disney Interactive Studio, etc. |

*"Activision Blizzard is a worldwide publisher of online, personal computer ("PC"), console, handheld, and mobile interactive entertainment products"*
*- Annual Report ATVI 2011*

**Key Financials and Non-Financials for 2011**

| | |
|---|---|
| Revenues: | US$ 4,755 million |
| Net Income: | US$ 1,328 million |
| Assets: | US$ 13,277 million |
| Debt: | No Long-Term Debt |
| EPS: | US$ 0.93 (Basic) |
| Employees: | 7,300 |

**Well-Known Products**
Call of Duty Series
World of Warcraft
StarCraft
Guitar Hero
Skylanders

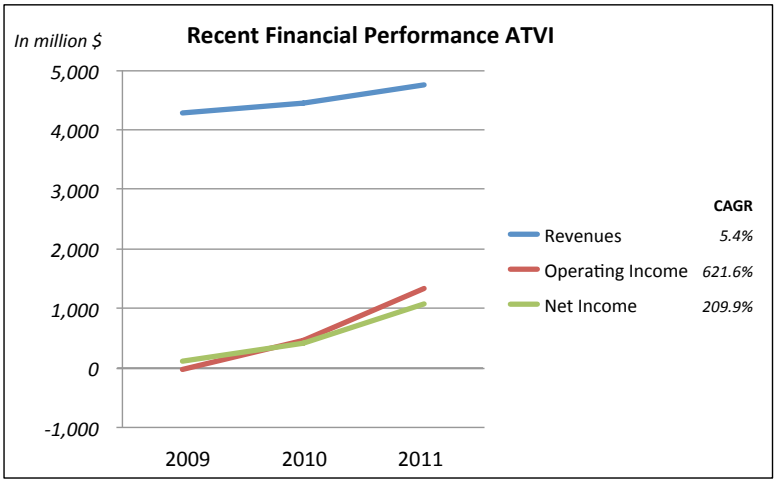
*Based on information from (Activision Blizzard Inc., 2011) and NAICS codes from (EBSCO Publishing, 2012).*

Activision Blizzard, Inc. is one of the leading companies in the industry of entertainment software publishing. The company was formed in 2008 through the merger of Activision and Blizzard Entertainment with the motive to form a pure-play video game publisher (Activision Blizzard Inc., 2007). The company is freely traded on the NASDAQ stock market, and the controlling shareholder is the multinational conglomerate Vivendi, which holds approximately 60% of the outstanding shares (Activision Blizzard Inc., 2011a). Vivendi is a French group that also holds ownership stakes in companies such as the music group Universal Music, the pay-tv group Canal+, and the telecommunications operator GVT.

The merger of the two firms built a company with two strong competitive sides. On one side of the merger, it is the company formerly known as Activision. This company has its roots all the way back to 1979, when it was founded as the first independent developer and distributor of entertainment software. At this early stage the company produced games for the video game console Atari 2600, and attained several game-titles selling in the number of millions (Activision Blizzard Inc., 2012a). It has since then developed into a company producing games for multiple game consoles, computers and mobile phones. Its games are considered popular among gamers, and it holds several top selling franchises such as Guitar Hero, Call of Duty and the Tony Hawk series (Activision Blizzard Inc., 2007).

On the other side of the merger is Blizzard Entertainment. Three students fresh out of UCLA founded the company in 1991 under the name Silicon & Synapse (Blizzard Entertainment, 2011). The company initially produced games for MS-DOS, Macintosh, Saga Genesis, and Super SNES (Blizzard Entertainment, 2012), but is now specializing in PC games. Similar to Activision, the company has since its establishment produced several top selling games in its category. Its most famous game titles are StarCraft, Diablo and the world most popular massively multiplayer online role-playing game (MMORPG) World of Warcraft (Activision Blizzard Inc., 2007). These three games-series have a history that stretches for more than a decade, and has received several awards for their high popularity among gamers. In addition, they are all among the best-selling PC game titles of all time (Activision Blizzard Inc., 2007).

As a consequence of the merger in 2008 (a reversed acquisition), the financial statements prior to this year are not directly comparable with subsequent years (Activision Blizzard Inc., 2010).




*Based on information from (Activision Blizzard Inc., 2011a)*

| SWOT Analysis – Activision Blizzard Inc. (ATVI) | |
|---|---|
| **Strengths**<br>• Current industry leader in publishing video games<br>• Well established game franchises with a good track record<br>• Several award-winning games<br>• International presence<br>• Has its own distribution network<br>• Demand is diversified through different console platforms<br>• No non-current liabilities<br>• Well established contracts with partners<br>• Measures to reduce business-risk in place | **Weaknesses**<br>• Highly cyclical demand<br>• A handful of game titles account for most of the revenues<br>• Unable to protect the company against sale of second-hand games<br>• Hard to estimate server capacity needed to satisfy demand<br>• Exposed to movements in foreign exchange rates<br>• Development costs are upfront and represents sunk cost<br>• Quality is in the eye of the consumer |
| **Opportunities**<br>• Build long-term relationships with customers<br>• Development of new types of games to the new demographic gamers in the industry<br>• Create more online-enabled games to attract customers from unexplored markets<br>• Increased user-generated content for games can reduce piracy<br>• Possibility to take advantage of low cost distribution through online services<br>• Increase focus on mobile games segment<br>• Possibility of developing new services | **Threats**<br>• Lower barriers to entry in industry due to decreased distribution costs (online)<br>• Fierce competition<br>• Popularity in video games segment attract more competitors<br>• Free products provided by competitors<br>• Piracy of products<br>• Hackers that might threat the reputation the company<br>• Loss of platform licensing agreements<br>• Correlation of revenues with the economy<br>• Short product life cycles |

*Based on information from (Activision Blizzard Inc., 2011a)*

## Appendix 2: Statement of Financial Structure

This appendix includes an analysis of the financial structure of Microsoft Corporation and Activision Blizzard based on their financial statements. In order to identify the financial structure in terms of working capital (WC), working capital need (WCN) and net cash (NC), the balance sheet of each of the companies have simplified into fewer line items. Following, the simplified balance sheet was rearranged to find the WC, the WCN and the NC.

Microsoft and Activision Blizzard can be identified as having a similar capital structure. Both of the companies have a negative working capital need, meaning that the operations have a surplus due to high short-term financing sources (liabilities) for a lower portion of current assets. Simultaneously, the working capital is positive, meaning that the long-term capital in the companies is able to finance the investments in long-term assets. The result of this is a combined positive impact on net cash in the companies.

This type of financial structure is common among companies that operate within retail or distribution of products/services (Yuan, Entwistle, & Stolowy, 2007). The tables related to calculating the Microsoft and Activision Blizzard's financial structure is displayed below.

**Simplified Balance Sheet, MSFT**

| (in millions) | 2011 | 2010 |
|---|---|---|
| Postive Cash | 52,772 | 36,788 |
| Current Assets | 22,146 | 18,888 |
| Non-Current Assets | 33,786 | 30,437 |
| Total Assets | 108,704 | 86,113 |
| | | |
| Short-Term Bank Loans/Bank Overdrafts | 0 | 1,000 |
| Current Liabilities | 28,774 | 25,147 |
| Long-Term Liabilieis | 22,847 | 13,791 |
| Shareholders' Equity | 57,083 | 46,175 |
| Total Liabilities and Shareholders' Equity | 108,704 | 86,113 |

**Simplified Balance Sheet, ATVI**

| (in millions) | 2011 | 2010 |
|---|---|---|
| Postive Cash | 3,525 | 3,508 |
| Current Assets | 1,855 | 1,924 |
| Non-Current Assets | 7,897 | 8,015 |
| Total Assets | 13,277 | 13,447 |
| | | |
| Short-Term Bank Loans/Bank Overdrafts | 0 | 0 |
| Current Liabilities | 2,556 | 2,960 |
| Long-Term Liabilieis | 229 | 284 |
| Shareholders' Equity | 10,492 | 10,203 |
| Total Liabilities and Shareholders' Equity | 13,277 | 13,447 |

**Statement of Financial Structure, MSFT**

| (in millions) | 2011 | 2010 |
|---|---|---|
| Shareholders' Equity | 57,083 | 46,175 |
| Long-Term Liabilieis | 22,847 | 13,791 |
| Non-Current Assets | 33,786 | 30,437 |
| Working Capital | 46,144 | 29,529 |
| | | |
| Current Assets | 22,146 | 18,888 |
| Current Liabilities | 28,774 | 25,147 |
| Working Capital Need | (6,628) | (6,259) |
| | | |
| Positive Cash | 52,772 | 36,788 |
| Short-Term Bank Loans/Bank Overdrafts | 0 | 1,000 |
| Net Cash | 52,772 | 35,788 |

**Statement of Financial Structure, ATVI**

| (in millions) | 2011 | 2010 |
|---|---|---|
| Shareholders' Equity | 10,492 | 10,203 |
| Long-Term Liabilieis | 229 | 284 |
| Non-Current Assets | 7,897 | 8,015 |
| Working Capital | 2,824 | 2,472 |
| | | |
| Current Assets | 1,855 | 1,924 |
| Current Liabilities | 2,556 | 2,960 |
| Working Capital Need | (701) | (1,036) |
| | | |
| Positive Cash | 3,525 | 3,508 |
| Short-Term Bank Loans/Bank Overdrafts | 0 | 0 |
| Net Cash | 3,525 | 3,508 |

*Based on information from (Microsoft Corporation, 2011a; Activision Blizzard Inc., 2011a)*

# Appendix 3: Segment Information for Microsoft

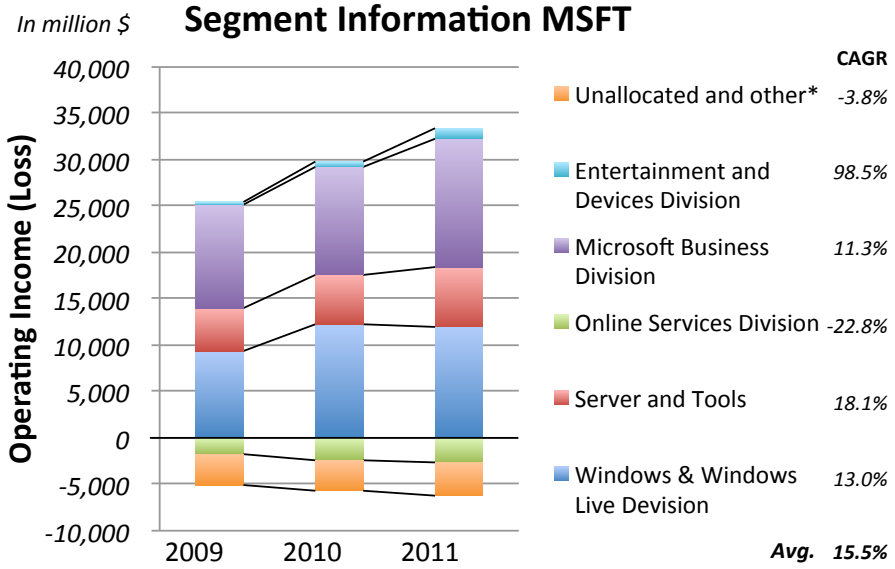
## Segment information for Microsoft Corporation (MSFT)

(In million $)

| Revenue | 2011 | Δ | 2010 | Δ | 2009 | CAGR |
|---|---|---|---|---|---|---|
| Windows and Windows Live Division | 18,778 | -0.1% | 18,792 | 20.7% | 15,563 | **9.8%** |
| Server and Tools | 17,107 | 11.2% | 15,390 | 4.8% | 14,686 | **7.9%** |
| Online Services Division | 2,528 | 14.9% | 2,200 | 4.3% | 2,110 | **9.5%** |
| Microsoft Business Division | 21,986 | 13.7% | 19,345 | 0.7% | 19,211 | **7.0%** |
| Entertainment and Devices Division | 8,716 | 40.0% | 6,224 | -3.0% | 6,416 | **16.6%** |
| Unallocated or other | 828 | 55.3% | 533 | 18.2% | 451 | **35.5%** |
| Consolidated | 69,943 | 11.9% | 62,484 | 6.9% | 58,437 | **9.4%** |

| Operating Income (Loss) | 2011 | Δ | 2010 | Δ | 2009 | CAGR |
|---|---|---|---|---|---|---|
| Windows and Windows Live Division | 11,968 | -2.3% | 12,253 | 30.7% | 9,372 | **13.0%** |
| Server and Tools | 6,453 | 21.3% | 5,320 | 15.0% | 4,627 | **18.1%** |
| Online Services Division | -2,638 | 9.5% | -2,410 | 37.8% | -1,749 | **22.8%** |
| Microsoft Business Division | 13,827 | 18.8% | 11,642 | 4.4% | 11,153 | **11.3%** |
| Entertainment and Devices Division | 1,135 | 98.1% | 573 | 99.0% | 288 | **98.5%** |
| Reconciling amounts | -3,584 | 9.3% | -3,280 | -1.4% | -3,328 | **3.8%** |
| Consolidated | 27,161 | 12.7% | 24,098 | 18.3% | 20,363 | **15.5%** |

*Financial segment information for MSFT, based on information from (Microsoft Corporation, 2011)*




** Includes costs from corporate-level activity, stock-based compensation expense and revenue reconciling amounts*

*Segment information for MSFT, based on information from (Microsoft Corporation, 2011)*

## Appendix 4: Entertainment and Devices Division, Microsoft

**Principal products and services offered by the EDD:**

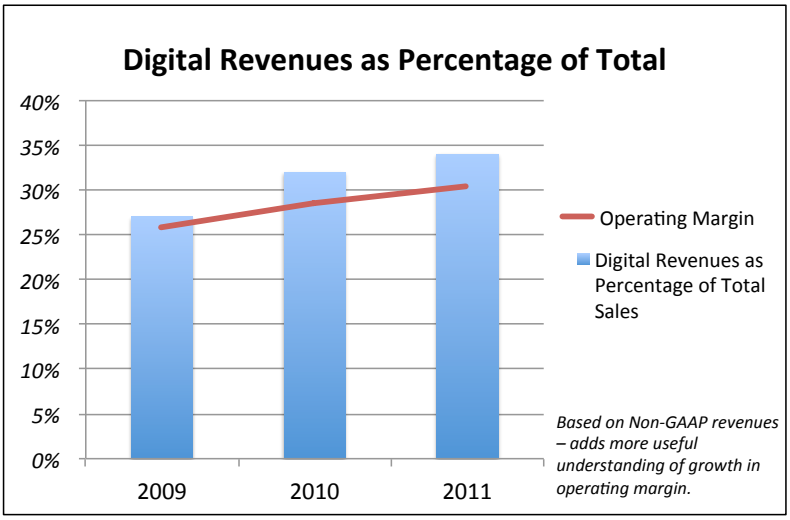
- *Xbox 360 gaming and entertainment console* – the product was officially launched in November 2005 to "provide a variety of entertainment choices for individuals and families through the use of the device, peripherals, content and online services" (Microsoft Corporation, 2011a, p. 12). Competing products from Nintendo and Sony arrived on the market in 2006.
- *Kinect for Xbox 360* – the product allows players to use their body as a means to control the game, and it also has enabled voice-control (Microsoft Corporation, 2012c). It is also awarded "the fastest-selling consumer electronics device" in history by Guinness World Records (Guinness World Records, 2011)
- *Xbox 360 video games* – titles include Forza Motorsport series, Blue Dragon, Crack Down series, Gears of War series, Halo series, Mass Effect and Banjo-Kazooie: Nuts & Bolts, among others.
- *Xbox accessories* – includes products such as controllers, headsets, hard drives and various cables.
- *Xbox LIVE* – this is Xbox's online service. The service enables you to play online with friends, watch HD-movies online and access other online entertainment (Microsoft Corporation, 2012e).
- *Mediaroom* – a product "designed to provide live, recorded, and on-demand television programming regardless of location or device" (Microsoft Corporation, 2011a, p. 12)
- *Windows Phone* – a mobile phone operating system "designed to bring users closer to the people, applications, and content they need, while providing unique capabilities such as Microsoft Office and Xbox LIVE functionality" (Microsoft Corporation, 2011a, p. 12).

© Robert Stenmark

## Appendix 5: Digital Online Channels for Activision Blizzard, Inc.

Some of the products Activision Blizzard is offering to its customers are "sold in a digital format, which allows the consumer to purchase and download the content at their convenience directly to their PC, console system or wireless device" (Activision Blizzard Inc., 2011a, p. 10). They are also offering consumers the opportunity to download value-added content to existing games in exchange a one-time fee through these online channels. This type of distribution has grown to be an increasingly important channel over the last years (Activision Blizzard Inc., 2011a), and contributed to stronger performance of the company. According to Activision Blizzard's own estimates, the sales through digital channels were up double digits in 2011 as compared with 2010 (Activision Blizzard Inc., 2011a, p. 43). The company has also expressed its intentions to continue to develop products that can be delivered through this channel.

Activision Blizzard currently "define[s] digital online channel-related sales as revenues from subscriptions and memberships, licensing royalties, value-added services, downloadable content, digitally distributed" (Activision Blizzard Inc., 2011a, p. 42).




*Based on information from (Activision Blizzard Inc., 2011a)*

## Appendix 6: Product Information – Skylanders: Spyro's Adventure

Skylanders: Spyro's Adventure is a game that "allows the player to transport real-life toys into virtual worlds of adventure through the 'Portal of Power'" (Activision Blizzard Inc., 2011c, p. 1). The portal is connected to the console, and enables the transportation of the toy. The toys that can be used are purchased with the introduction package or separately, and each one of the characters has unique powers that can be used in the game. Players can also play with friends by placing two toys on the "Portal of Power," this way the players can team up to play cooperative multiplayer or each other. Another special feature with the toys is that they have a memory function that enables it to be used on several different consoles and still recall the progress made in the game.

The game is offered for personal computers (PC, Mac), video game consoles (Xbox 360, Nintendo Wii, Sony PlayStation 3) and handheld devices (Nintendo 3DS).


*Illustration of the game Skylanders – Spyro's Adventure*

## Appendix 7: Affiliated Industries

### NAICS Definitions for MSFT and ATVI

**NAICS 334310 / GICS 252010**
**Audio And Video Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing electronic audio and video equipment for home entertainment, motor vehicles, and public address and musical instrument amplification. Examples of products made by these establishments are video cassette recorders, televisions, stereo equipment, speaker systems, household-type video cameras, jukeboxes, and amplifiers for musical instruments and public address systems.

**NAICS 511210 / GICS 451030**
**Software Publishers**

This industry comprises establishments primarily engaged in computer software publishing or publishing and reproduction. Establishments in this industry carry out operations necessary for producing and distributing computer software, such as designing, providing documentation, assisting in installation, and providing support services to software purchasers. These establishments may design, develop, and publish, or publish only.

**NAICS: 517919 / GICS 452010**
**All Other Telecommunication**

This industry comprises establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.

**NAICS 541511 / GICS 451020**
**Custom Computer Programming Services**

This industry comprises establishments primarily engaged in writing, modifying, testing, and supporting software to meet the needs of a particular customer.

*Descriptions of NAICS from U.S. Census Bureau (2012), GICS codes obtained from Standard & Poor's (2012)*

## Appendix 8: Increase in Installed Hardware Base

The following table is calculated using LTD-data obtained from the investor relation web pages for the given companies (Microsoft Corporation, 2012g; Nintendo Co., Ltd., 2012; Sony Computer Entertainment, Inc., 2012).

**Increase in Installed Hardware Base**

| (in of units millions, except percentages) | 2011 | 2010 | 2009 |
|---|---|---|---|
| Installed Hardware Base at Year End | | | |
| Microsoft Xbox 360 | 55.3 | 41.8 | 31.5 |
| Sony Playstation 3 | 62.0 | 47.9 | 33.5 |
| Nintendo Wii | 95.0 | 86.0 | 70.9 |
| Total Installed Hardware Base | 212.3 | 175.7 | 135.9 |
| Annual Increase | | | |
| Microsoft Xbox 360 | 13.5 | 10.3 | 11.2 |
| Sony Playstation 3 | 14.1 | 14.4 | 12.4 |
| Nintendo Wii | 9.0 | 15.1 | 20.5 |
| Total Increase | 36.6 | 39.8 | 44.1 |
| Percentage Increase | | | |
| Microsoft Xbox 360 | 32.3% | 32.7% | 55.2% |
| Sony Playstation 3 | 29.4% | 43.0% | 58.8% |
| Nintendo Wii | 10.4% | 21.3% | 40.7% |
| Total Percentage Increase | 20.8% | 29.3% | 48.1% |
| Year-Over-Year Rates | | | |
| Microsoft Xbox 360 | 31.1% | -8.0% | 28.7% |
| Sony Playstation 3 | -2.1% | 16.1% | 15.9% |
| Nintendo Wii | -40.6% | -26.5% | -20.9% |
| Total Percentage Increase | -8.1% | -9.9% | -2.7% |
| Share of Annual Increase | | | |
| Microsoft Xbox 360 | 36.9% | 25.9% | 25.4% |
| Sony Playstation 3 | 38.6% | 36.2% | 28.1% |
| Nintendo Wii | 24.5% | 37.9% | 46.5% |
| Total | 100.0% | 100.0% | 100.0% |

*Increase in Installed Hardware Base for Microsoft, Sony and Wii*

© Robert Stenmark

## Appendix 9: Geographical Segmentation of Console Market

The following table illustrates the geographical market shares in the games console market for the years 2007 to 2011, along with growth rates for each respective geographic segment.

### Geographical Segmentation of Console Market

| (in millions of dollars) | 2011 | 2010 | 2009 | 2008 | 2007 |
|---|---|---|---|---|---|
| Europe | 10,715 | 10,312 | 10,017 | 10,043 | 8,373 |
| United States | 8,703 | 8,092 | 7,620 | 7,802 | 7,036 |
| Rest of the World | 7,352 | 7,101 | 6,784 | 6,920 | 6,901 |
| Global | 26,769 | 25,504 | 24,421 | 24,765 | 22,310 |

| (in percent) | 2011 | 2010 | 2009 | 2008 | 2007 |
|---|---|---|---|---|---|
| Europe | 40.0% | 40.4% | 41.0% | 40.6% | 37.5% |
| United States | 32.5% | 31.7% | 31.2% | 31.5% | 31.5% |
| Rest of the World | 27.5% | 27.8% | 27.8% | 27.9% | 30.9% |
| Global | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

### Geographical Growth of Console Market

| (in percent) | 2011-2010 | 2010-2009 | 2009-2008 | 2008-2007 |
|---|---|---|---|---|
| Europe | 3.9% | 2.9% | -0.3% | 19.9% |
| United States | 7.6% | 6.2% | -2.3% | 10.9% |
| Rest of the World | 3.5% | 4.7% | -2.0% | 0.3% |
| Global | 5.0% | 4.4% | -1.4% | 11.0% |

| CAGR | 2011-2007 |
|---|---|
| Europe | 6.4% |
| United States | 5.5% |
| Rest of the World | 1.6% |
| Global | 4.7% |

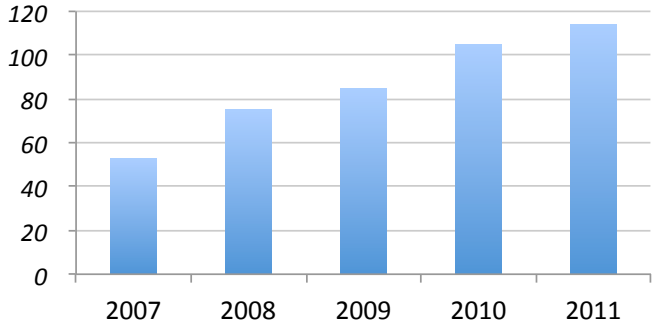
*Geographical Segmentation of Console Market (MarketLine, 2012a, 2012b, 2012c)*

## Appendix 10: Growth in Entertainment Software

The growth in the entertainment industry has been met by two different trends, one where high definition games are experiencing a positive growth, while the growth for products for casual platforms are experiencing a negative growth. The following table and graph illustrates the large growth that has been observed for high definition games over the last few years.

**Growth in High Definition Software Units**

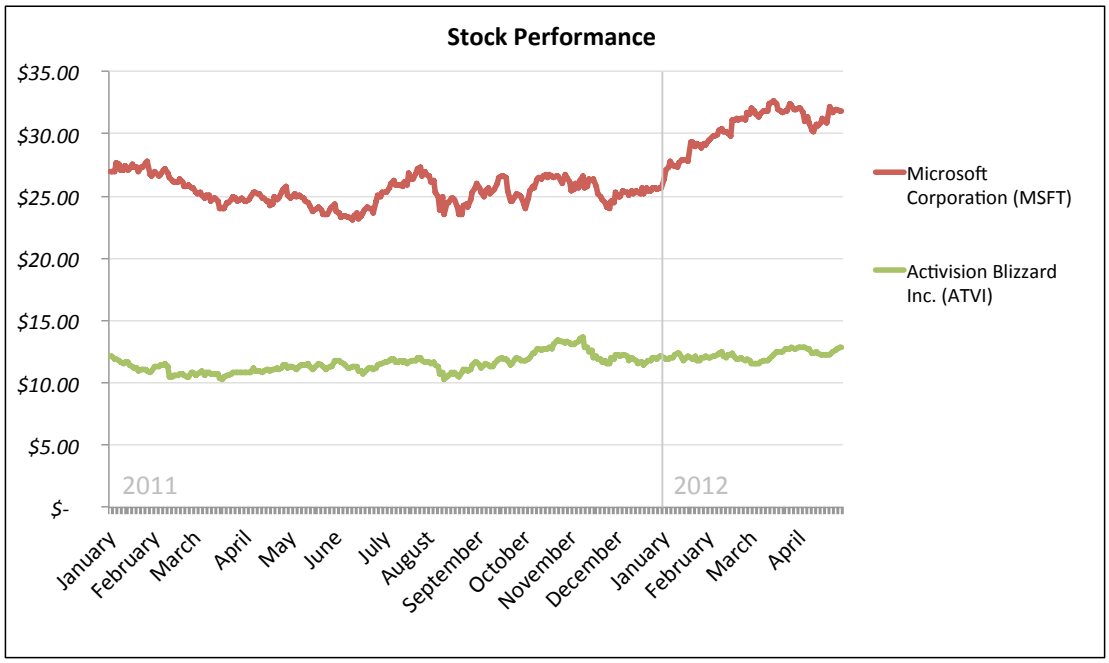
| (in of units millions, except percentages) | Units | Annual Growth | CAGR |
|---|---|---|---|
| 2007 | 53 | - | - |
| 2008 | 75 | 41.5% | 41.5% |
| 2009 | 85 | 13.3% | 26.6% |
| 2010 | 105 | 23.5% | 25.6% |
| 2011 | 114 | 8.6% | 21.1% |




*Based on information from (Karimzad, Grant, & Fassler, 2012)*

## Appendix 11: Stock Performance

The following figure illustrates the stock performance of Microsoft Corporation (MSFT) and Activision Blizzard (ATVI), both which are listed at the NASDAQ Stock Market. The figure is based on historical closing quotes adjusted for stock splits and dividends.




*Historical Performance of Microsoft Corporation (MSFT) and Activision Blizzard Inc. (ATVI)*

## Appendix 12: R&D Costs for Competitors Recognized by Microsoft

The following table is the extensive version of Table 6 in section 6.1.1 in the paper, and includes all the companies recognized by Microsoft. The table calculates the R&D of the direct competitors in relation to total revenues. The industry R&D costs for the years 2009 to 2011 are obtained by assigning each division with its share of total revenues, and then multiplying with the median/average for that given market segment. It is observed that the average is lower than the median (the distribution of R&D costs are negatively skewed), indicating that majority of the R&D spending is higher than the average.

**R&D for Listed Companies that Microsoft Recognize as Competitors**

(in million $, except for percentages)

| | R&D Expense | Revenues | R&D-ratio |
|---|---|---|---|
| Main Competitors for: | | | |
| *Windows and Windows Live Division* | | | |
| Apple | 2,429 | 108,249 | 2.2% |
| Google | 3,762 | 29,321 | 12.8% |
| Yahoo! | 1,222 | 7,209 | 17.0% |
| Average | | | 10.7% |
| Median | | | 12.8% |
| *Servers and Tools Division* | | | |
| Hewlett-Packard | 3,254 | 127,245 | 2.6% |
| IBM | 6,258 | 60,721 | 10.3% |
| Oracle | 4,519 | 35,622 | 12.7% |
| CA Technologies | 471 | 4,429 | 10.6% |
| VMWare | 775 | 3,767 | 20.6% |
| Adobe | 738 | 4,216 | 17.5% |
| Intel | 8,350 | 53,999 | 15.5% |
| Google | 3,762 | 29,321 | 12.8% |
| Salesforce.com | 188 | 1,657 | 11.3% |
| Average | | | 12.7% |
| Median | | | 12.7% |
| *Online Services Division* | | | |
| Google | 3,762 | 29,321 | 12.8% |
| Yahoo! | 1,222 | 7,209 | 17.0% |
| Average | | | 14.9% |
| Median | | | 14.9% |

| | R&D Expense | Revenues | R&D-ratio |
|---|---|---|---|
| Main Competitors for: | | | |
| *Microsoft Business Division* | | | |
| Adobe | 738 | 4,216 | 17.5% |
| Apple | 2,429 | 108,249 | 2.2% |
| Google | 3,762 | 29,321 | 12.8% |
| IBM | 6,258 | 60,721 | 10.3% |
| Oracle | 4,519 | 35,622 | 12.7% |
| SAP | 2,571 | 18,872 | 13.6% |
| Average | | | 11.5% |
| Median | | | 12.8% |
| *Entertainment and Devices Division* | | | |
| Nintendo | 634 | 12,221 | 5.2% |
| Sony | 5,309 | 89,327 | 5.9% |
| Apple | 2,429 | 108,249 | 2.2% |
| Google | 3,762 | 29,321 | 12.8% |
| Research in Motion | 1,351 | 19,907 | 6.8% |
| Average | | | 6.6% |
| Median | | | 5.9% |

| Industry Research and Development Costs* | 2009 | 2010 | 2011 | Average |
|---|---|---|---|---|
| Average R&D | 11.1% | 11.1% | 10.9% | 11.0% |
| Median R&D | 12.0% | 12.0% | 11.8% | 12.0% |

** Calculated as the Proportion of the Operating Segments' Revenues to Total Revenues*

*Extensive List of Competitors' Spending on R&D in Relation to Total Revenues, Based on Competitors' Annual Reports*

## Appendix 13: Pure-Play Entertainment Software Companies' Costs

The following two tables is the extensive version of Table 9 in section 6.1.2 in the paper. The tables include most of the pure-play entertainment software companies that are listed at stock exchanges in the world, and hence have public financial statements. The information is split into two tables as the companies have opted for different recognition of their costs. The first table illustrates companies that have equal recognition of costs as Activision Blizzard, and are companies that have American or European origins, while the second table illustrates companies with different recognition of costs and that have Japanese origins. It should also be noted that the tables includes lines that also are corrected for large outliers, and that the second table includes two lines that classifies the average and median costs across the industry (indicated by *).

**Costs at Pure-Play Entertainment Software Companies**

(in procentage terms of total revenues)

| | Cost of Sales | Research and Development | Sales and Marketing | General and Administrative | Restructuring | Total Cost |
|---|---|---|---|---|---|---|
| Activision Blizzard | 36.9% | 13.6% | 11.5% | 9.6% | 0.5% | 72.1% |
| Electronic Arts | 41.8% | 32.1% | 20.8% | 8.4% | 4.5% | 108.7% |
| Ubisoft Entertainment | 35.1% | 35.6% | 20.7% | 6.8% | 0.0% | 98.2% |
| Take-Two Interactive Software, Inc. | 60.6% | 6.2% | 15.5% | 9.6% | 0.0% | 93.1% |
| Atari SA | 39.2% | 24.3% | 17.3% | 18.2% | 0.0% | 99.1% |
| THQ Inc. | 78.1% | 11.9% | 23.5% | 6.8% | 0.1% | 120.4% |
| Interplay Entertainment, Corp. | 14.2% | 37.2% | 15.7% | 101.1% | 0.0% | 168.2% |
| Zoo Entertainment, Inc. | 173.4% | 26.4% | 22.8% | 77.5% | 0.0% | 340.6% |
| Perfect World Co, Ltd. | 18.0% | 17.0% | 19.5% | 9.9% | 0.0% | 64.4% |
| Zynga, Inc. | 28.9% | 63.8% | 20.5% | 22.3% | 0.0% | 135.5% |
| Minimum | 14.2% | 6.2% | 15.5% | 6.8% | 0.0% | 64.4% |
| Maximum | 173.4% | 63.8% | 23.5% | 101.1% | 4.5% | 340.6% |
| Average | 54.4% | 28.3% | 19.6% | 29.0% | 0.5% | 136.5% |
| Median | 39.2% | 26.4% | 20.5% | 9.9% | 0.0% | 108.7% |
| Average without Large Outliers | 39.5% | 28.3% | 19.6% | 29.0% | 0.5% | 92.7% |
| Median without Large Outliers | 39.5% | 26.4% | 20.5% | 9.9% | 0.0% | 98.2% |

*Pure-Play Companies' Costs, Based on Annual Reports of Game Software Publishers*

**Costs at Pure-Play Entertainment Software Companies**

**Firms that recognizes costs differently (mainly Japanese companies)**

| | Cost of Sales | Marketing, General and Administrative | Total Cost |
|---|---|---|---|
| Konami Corporation | 64.5% | 19.3% | 84.1% |
| Sega Sammy Holdings, Inc. | 54.8% | 24.6% | 79.4% |
| Capcom Co. Ltd. | 61.8% | 23.5% | 85.3% |
| Namco Bandai Holdings | 61.9% | 28.6% | 90.5% |
| Tecmo Koei Holdings Co. Ltd. | 64.0% | 25.7% | 89.7% |
| Square Enix Holdings Co. Ltd. | 56.7% | 31.9% | 88.3% |
| Nexon Corporation | 17.2% | 39.7% | 55.9% |
| Minimum | 17.2% | 19.3% | 55.9% |
| Maximum | 64.5% | 39.7% | 90.5% |
| Average | 54.4% | 27.6% | 81.9% |
| Average Costs Across the Industry without Large Outliers* | | | 87.3% |
| Median Costs Across the Industry without Large Outliers* | | | 89.0% |

*Pure-Play Companies' Costs, Based on Annual Reports of Game Software Publishers*

# Appendix 14: Standalone Valuation Results

### Income Statement - Microsoft Corporation

| | Past Performance | | | Forecasted Performance | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Revenue: | | | | | | | | | | | | | |
| Windows & Windows Live Division | 15,563 | 18,792 | 18,778 | 19,591 | 20,281 | 20,934 | 21,608 | 22,304 | 22,943 | 23,529 | 24,063 | 24,549 | 24,990 |
| Server and Tools Division | 14,686 | 15,390 | 17,107 | 18,281 | 19,366 | 20,360 | 21,264 | 22,081 | 22,815 | 23,471 | 24,054 | 24,571 | 25,028 |
| Online Services Division | 2,110 | 2,200 | 2,528 | 2,955 | 3,323 | 3,631 | 3,833 | 4,014 | 4,176 | 4,319 | 4,445 | 4,554 | 4,641 |
| Microsoft Business Division | 19,211 | 19,345 | 21,986 | 22,218 | 25,107 | 25,349 | 25,594 | 27,590 | 27,830 | 28,048 | 29,361 | 29,547 | 29,715 |
| Entertainment and Devices Division | 6,416 | 6,224 | 8,716 | 9,936 | 11,637 | 12,191 | 12,770 | 13,377 | 14,013 | 14,490 | 14,843 | 15,102 | 15,291 |
| Unallocated and other | 451 | 533 | 828 | 737 | 805 | 833 | 859 | 903 | 927 | 948 | 977 | 993 | 1,007 |
| Total revenue | 58,437 | 62,484 | 69,943 | 73,719 | 80,519 | 83,297 | 85,928 | 90,270 | 92,704 | 94,804 | 97,743 | 99,317 | 100,673 |
| Operating expenses: | | | | | | | | | | | | | |
| Cost of revenue | 12,155 | 12,395 | 15,577 | 15,458 | 18,573 | 19,214 | 18,235 | 18,929 | 19,440 | 19,880 | 20,496 | 20,826 | 21,111 |
| Research and development | 9,010 | 8,714 | 9,043 | 10,393 | 11,351 | 11,743 | 12,114 | 12,726 | 11,086 | 11,337 | 11,689 | 11,877 | 12,039 |
| Sales and Marketing | 12,879 | 13,214 | 13,940 | 15,039 | 16,909 | 17,055 | 17,400 | 18,078 | 18,541 | 18,961 | 19,549 | 19,863 | 20,135 |
| General and administrative | 4,030 | 4,063 | 4,222 | 4,776 | 5,216 | 5,396 | 5,567 | 5,848 | 6,006 | 6,142 | 6,332 | 6,434 | 6,522 |
| Total operating expenses | 38,074 | 38,386 | 42,782 | 45,666 | 52,050 | 53,408 | 53,316 | 55,581 | 55,072 | 56,320 | 58,065 | 59,001 | 59,806 |
| **Operating income (EBIT)** | **20,363** | **24,098** | **27,161** | **28,053** | **28,469** | **29,889** | **32,612** | **34,688** | **37,632** | **38,484** | **39,677** | **40,316** | **40,867** |
| Windows & Windows Live Division | 9,372 | 12,253 | 11,968 | 12,361 | 12,545 | 13,170 | 14,370 | 15,285 | 16,582 | 16,957 | 17,483 | 17,765 | 18,007 |
| Server and Tools | 4,627 | 5,320 | 6,453 | 6,665 | 6,764 | 7,101 | 7,748 | 8,241 | 8,941 | 9,143 | 9,427 | 9,578 | 9,709 |
| Online Services Division | (1,749) | (2,410) | (2,638) | (2,725) | (2,765) | (2,903) | (3,167) | (3,369) | (3,655) | (3,738) | (3,854) | (3,916) | (3,969) |
| Microsoft Business Division | 11,153 | 11,642 | 13,827 | 14,281 | 14,493 | 15,216 | 16,602 | 17,659 | 19,158 | 19,591 | 20,199 | 20,524 | 20,804 |
| Entertainment and Devices Division | 288 | 573 | 1,135 | 1,172 | 1,190 | 1,249 | 1,363 | 1,450 | 1,573 | 1,608 | 1,658 | 1,685 | 1,708 |
| Reconciling amounts | (3,328) | (3,280) | (3,584) | (3,702) | (3,757) | (3,944) | (4,303) | (4,577) | (4,966) | (5,078) | (5,236) | (5,320) | (5,393) |
| Other income (expense): | | | | | | | | | | | | | |
| Dividends and interest income | 744 | 843 | 900 | 961 | 1,049 | 1,085 | 1,120 | 1,176 | 1,208 | 1,235 | 1,274 | 1,294 | 1,312 |
| Interest expense | (38) | (151) | (295) | (377) | (391) | (386) | (370) | (349) | (356) | (410) | (465) | (522) | (579) |
| Net recognized gains (losses) on investments | (125) | 348 | 439 | 296 | 341 | 341 | 341 | 341 | 341 | 341 | 341 | 341 | 341 |
| Net losses on derivatives | (558) | (140) | (77) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) |
| Net gains (losses) on foreign currency remeasurements | (509) | 1 | (26) | - | - | - | - | - | - | - | - | - | - |
| Other | (56) | 14 | (31) | (29) | (32) | (33) | (34) | (35) | (36) | (37) | (38) | (39) | (40) |
| Total other income (expense) | (542) | 915 | 910 | 593 | 709 | 750 | 799 | 874 | 899 | 871 | 853 | 816 | 776 |
| **Income before income taxes (EBT)** | **19,821** | **25,013** | **28,071** | **28,646** | **29,179** | **30,639** | **33,411** | **35,562** | **38,531** | **39,356** | **40,530** | **41,133** | **41,643** |
| Provision for income taxes | 5,252 | 6,253 | 4,921 | 5,557 | 5,661 | 5,944 | 6,482 | 6,899 | 7,475 | 7,635 | 7,863 | 7,980 | 8,079 |
| **Net income** | **14,569** | **18,760** | **23,150** | **23,089** | **23,518** | **24,695** | **26,929** | **28,663** | **31,056** | **31,721** | **32,668** | **33,153** | **33,564** |
| Earnings per share: | | | | | | | | | | | | | |
| Basic | 1.63 | 2.13 | 2.73 | 2.72 | 2.77 | 2.91 | 3.17 | 3.38 | 3.66 | 3.74 | 3.85 | 3.90 | 3.95 |
| Diluted | 1.62 | 2.10 | 2.69 | 2.69 | 2.74 | 2.87 | 3.13 | 3.34 | 3.61 | 3.69 | 3.80 | 3.86 | 3.91 |
| Weighted-average shares outstanding: | | | | | | | | | | | | | |
| Basic | 8,945 | 8,813 | 8,490 | 8,490 | 8,490 | 8,490 | 8,490 | 8,490 | 8,490 | 8,490 | 8,490 | 8,490 | 8,490 |
| Diluted | 8,996 | 8,927 | 8,593 | 8,593 | 8,593 | 8,593 | 8,593 | 8,593 | 8,593 | 8,593 | 8,593 | 8,593 | 8,593 |
| Cash dividends declared per common share | 0.52 | 0.52 | 0.64 | 0.72 | 0.74 | 0.77 | 0.84 | 0.90 | 0.97 | 0.99 | 1.02 | 1.04 | 1.05 |
| Total Dividends Declared | 4,651 | 4,583 | 5,434 | 6,144 | 6,258 | 6,571 | 7,166 | 7,627 | 8,264 | 8,440 | 8,692 | 8,822 | 8,931 |

© Robert Stenmark

## Balance Sheet - Microsoft Corporation

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| **Assets** | | | | | | | | | | | | | |
| Current Assets: | | | | | | | | | | | | | |
| Cash and Cash Equivalents | 6,076 | 5,505 | 9,610 | 12,552 | 30,021 | 47,254 | 65,691 | 86,709 | 110,861 | 135,554 | 161,100 | 186,928 | 213,467 |
| Short-Term investments | 25,371 | 31,283 | 43,162 | 53,141 | 53,141 | 53,141 | 53,141 | 53,141 | 53,141 | 53,141 | 53,141 | 53,141 | 53,141 |
| Total cash, cash equivalents, and short term investments | 31,447 | 36,788 | 52,772 | 65,693 | 83,162 | 100,395 | 118,832 | 139,850 | 164,002 | 188,695 | 214,241 | 240,069 | 266,608 |
| Accounts Receivable, Net of Allowances | 11,192 | 13,014 | 14,987 | 15,090 | 16,482 | 17,050 | 17,589 | 18,477 | 18,976 | 19,406 | 20,007 | 20,329 | 20,607 |
| Inventories, Net | 717 | 740 | 1,372 | 1,228 | 1,475 | 1,526 | 1,448 | 1,503 | 1,544 | 1,579 | 1,628 | 1,654 | 1,677 |
| Deferred Income Taxes, Net | 2,213 | 2,184 | 2,467 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 |
| Other | 3,711 | 2,950 | 3,320 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 |
| Total Current Assets | 49,280 | 55,676 | 74,918 | 86,969 | 106,077 | 123,929 | 142,827 | 164,789 | 189,480 | 214,638 | 240,834 | 267,010 | 293,849 |
| Property and Equipment: | | | | | | | | | | | | | |
| Opening balance | 6,242 | 7,535 | 7,630 | 8,162 | 8,645 | 9,241 | 9,782 | 10,275 | 10,794 | 11,264 | 11,688 | 12,105 | 12,470 |
| Additions | 3,119 | 1,977 | 2,355 | 2,580 | 2,818 | 2,915 | 3,007 | 3,159 | 3,245 | 3,318 | 3,421 | 3,476 | 3,205 |
| Revaluations/Disposals | (126) | (82) | 177 | - | - | - | - | - | - | - | - | - | - |
| Depreciation | (1,700) | (1,800) | (2,000) | (2,098) | (2,222) | (2,375) | (2,514) | (2,641) | (2,774) | (2,895) | (3,004) | (3,111) | (3,205) |
| Closing balance | 7,535 | 7,630 | 8,162 | 8,645 | 9,241 | 9,782 | 10,275 | 10,794 | 11,264 | 11,688 | 12,105 | 12,470 | 12,470 |
| Equity and Other Investments | 4,933 | 7,754 | 10,865 | 9,068 | 9,068 | 9,068 | 9,068 | 9,068 | 9,068 | 9,068 | 9,068 | 9,068 | 9,068 |
| Goodwill | 12,503 | 12,394 | 12,581 | 19,698 | 19,698 | 19,698 | 19,698 | 19,698 | 19,698 | 19,698 | 19,698 | 19,698 | 19,698 |
| Intangible Assets: | | | | | | | | | | | | | |
| Opening balance | 1,973 | 1,759 | 1,158 | 744 | 890 | 1,027 | 1,137 | 1,227 | 1,311 | 1,383 | 1,444 | 1,501 | 1,549 |
| Additions | 354 | 343 | 242 | 369 | 403 | 417 | 430 | 452 | 464 | 474 | 489 | 497 | 463 |
| Disposals | 56 | (496) | (266) | - | - | - | - | - | - | - | - | - | - |
| Amortization | (624) | (448) | (390) | (222) | (266) | (307) | (340) | (367) | (392) | (414) | (432) | (449) | (463) |
| Closing balance | 1,759 | 1,158 | 744 | 890 | 1,027 | 1,137 | 1,227 | 1,311 | 1,383 | 1,444 | 1,501 | 1,549 | 1,549 |
| Deferred Income Taxes | 279 | - | - | - | - | - | - | - | - | - | - | - | - |
| Other Long-Term Assets | 1,599 | 1,501 | 1,434 | 1,403 | 1,403 | 1,403 | 1,403 | 1,403 | 1,403 | 1,403 | 1,403 | 1,403 | 1,403 |
| Total Assets | 77,888 | 86,113 | 108,704 | 126,673 | 146,514 | 165,016 | 184,498 | 207,063 | 232,297 | 257,938 | 284,609 | 311,198 | 338,037 |
| **Liabilities and Shareholders' Equity** | | | | | | | | | | | | | |
| Current Liabilities: | | | | | | | | | | | | | |
| Accounts Payable | 3,324 | 4,025 | 4,197 | 4,471 | 5,371 | 5,557 | 5,274 | 5,474 | 5,622 | 5,749 | 5,928 | 6,023 | 6,105 |
| Short-Term Debt | 2,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - |
| Accrued Compensation | 3,156 | 3,283 | 3,575 | 3,681 | 3,928 | 3,971 | 4,002 | 4,107 | 4,121 | 4,117 | 4,147 | 4,117 | 4,077 |
| Income Taxes | 725 | 1,074 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| Short-Term Unearned Revenue | 13,003 | 13,652 | 15,722 | 15,850 | 17,312 | 17,909 | 18,475 | 19,408 | 19,931 | 20,383 | 21,015 | 21,353 | 21,645 |
| Securities Lending Payable | 1,684 | 182 | 1,208 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 |
| Other | 3,142 | 2,931 | 3,492 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 |
| Total Current Liablities | 27,034 | 26,147 | 28,774 | 28,803 | 31,412 | 32,237 | 32,551 | 33,791 | 34,476 | 35,051 | 35,891 | 36,295 | 36,629 |
| | | | | | | | | | | | | | |
| Long Term Debt | 3,746 | 4,939 | 11,921 | 12,368 | 12,201 | 11,699 | 11,050 | 11,251 | 12,958 | 14,702 | 16,497 | 18,320 | 20,165 |
| Newly Issued Debt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long-Term Unearned Revenue | 1,281 | 1,178 | 1,398 | 1,493 | 1,631 | 1,687 | 1,740 | 1,828 | 1,878 | 1,920 | 1,980 | 2,012 | 2,039 |
| Deferred Income Taxes | - | 229 | 1,456 | 1,456 | 1,456 | 1,456 | 1,456 | 1,456 | 1,456 | 1,456 | 1,456 | 1,456 | 1,456 |
| Other Long-Term Liabilites | 6,269 | 7,445 | 8,072 | 8,525 | 8,525 | 8,525 | 8,525 | 8,525 | 8,525 | 8,525 | 8,525 | 8,525 | 8,525 |
| Total Liabilities | 38,330 | 39,938 | 51,621 | 52,645 | 55,225 | 55,604 | 55,322 | 56,851 | 59,292 | 61,654 | 64,349 | 66,607 | 68,813 |
| | | | | | | | | | | | | | |
| Stockholders' Equity: | | | | | | | | | | | | | |
| Common Stock and Paid-In Capital | 62,382 | 62,856 | 63,415 | 63,415 | 63,415 | 63,415 | 63,415 | 63,415 | 63,415 | 63,415 | 63,415 | 63,415 | 63,415 |
| Retained Deficit, including accumulated comprehensive income: | | | | | | | | | | | | | |
| Opening Balance | (26,563) | (22,824) | (16,681) | (6,332) | 10,613 | 27,873 | 45,997 | 65,761 | 86,797 | 109,589 | 132,870 | 156,845 | 181,176 |
| Net Income | 14,569 | 18,760 | 23,150 | 23,089 | 23,518 | 24,695 | 26,929 | 28,663 | 31,056 | 31,721 | 32,668 | 33,153 | 33,564 |
| Other Comprehensive Income | (171) | 86 | 808 | - | - | - | - | - | - | - | - | - | - |
| Common Stock Cash Dividend | (4,620) | (4,547) | (5,394) | (6,144) | (6,258) | (6,571) | (7,166) | (7,627) | (8,264) | (8,440) | (8,692) | (8,822) | (8,931) |
| Common Stock Repurchased | (6,039) | (8,156) | (8,215) | - | - | - | - | - | - | - | - | - | - |
| Closing Balance | (22,824) | (16,681) | (6,332) | 10,613 | 27,873 | 45,997 | 65,761 | 86,797 | 109,589 | 132,870 | 156,845 | 181,176 | 205,809 |
| Total Shareholders' Equity | 39,558 | 46,175 | 57,083 | 74,028 | 91,288 | 109,412 | 129,176 | 150,212 | 173,004 | 196,285 | 220,260 | 244,591 | 269,224 |
| Total Liabilities and Shareholders' Equity | 77,888 | 86,113 | 108,704 | 126,673 | 146,514 | 165,016 | 184,498 | 207,063 | 232,297 | 257,938 | 284,609 | 311,198 | 338,037 |

## Debt Position - Microsoft Corporation

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Short-term debt | 2,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - |
| Long-term debt | 3,746 | 4,939 | 11,921 | 12,368 | 12,201 | 11,699 | 11,050 | 11,251 | 12,958 | 14,702 | 16,497 | 18,320 | 20,165 |
| Operating leases | 2,385 | 1,898 | 1,952 | 2,078 | 2,078 | 2,078 | 2,078 | 2,078 | 2,078 | 2,078 | 2,078 | 2,078 | 2,078 |
| Total debt | 8,131 | 7,837 | 13,873 | 14,446 | 14,279 | 13,777 | 13,128 | 13,329 | 15,036 | 16,780 | 18,576 | 20,398 | 22,243 |
| Cash and cash equivalents | 6,076 | 5,505 | 9,610 | 12,552 | 30,021 | 47,254 | 65,691 | 86,709 | 110,861 | 135,554 | 161,100 | 186,928 | 213,467 |
| **Net debt** | **2,055** | **2,332** | **4,263** | **1,894** | **(15,742)** | **(33,477)** | **(52,563)** | **(73,380)** | **(95,825)** | **(118,774)** | **(142,524)** | **(166,529)** | **(191,224)** |
| Interest expense/Debt | 0.47% | 1.93% | 2.13% | 2.61% | 2.74% | 2.80% | 2.82% | 2.62% | 2.37% | 2.44% | 2.50% | 2.56% | 2.60% |

## Operating Working Capital - Microsoft Corporation

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Accounts Receivables | 11,192 | 13,014 | 14,987 | 15,090 | 16,482 | 17,050 | 17,589 | 18,477 | 18,976 | 19,406 | 20,007 | 20,329 | 20,607 |
| Inventories | 717 | 740 | 1,372 | 1,228 | 1,475 | 1,526 | 1,448 | 1,503 | 1,544 | 1,579 | 1,628 | 1,654 | 1,677 |
| Other Current Assets | 3,711 | 2,950 | 3,320 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 | 2,608 |
| Accounts Payable | 3,324 | 4,025 | 4,197 | 4,471 | 5,371 | 5,557 | 5,274 | 5,474 | 5,622 | 5,749 | 5,928 | 6,023 | 6,105 |
| Accrued Compensation | 3,156 | 3,283 | 3,575 | 3,681 | 3,928 | 3,971 | 4,002 | 4,107 | 4,121 | 4,117 | 4,147 | 4,117 | 4,077 |
| Short-Term Unearned Revenue | 13,003 | 13,652 | 15,722 | 15,850 | 17,312 | 17,909 | 18,475 | 19,408 | 19,931 | 20,383 | 21,015 | 21,353 | 21,645 |
| Working Capital | (3,863) | (4,256) | (3,815) | (5,076) | (6,047) | (6,252) | (6,105) | (6,401) | (6,547) | (6,657) | (6,847) | (6,902) | (6,936) |
| Change in Net Working Capital | (1,061) | (393) | 441 | (1,261) | (971) | (205) | 147 | (296) | (146) | (110) | (190) | (55) | (34) |

## Free Cash Flow - Microsoft Corporation

| *Direct Method* | Past Performance | | | Forecasted Performance | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Total Revenues | 58,437 | 62,484 | 69,943 | 73,719 | 80,519 | 83,297 | 85,928 | 90,270 | 92,704 | 94,804 | 97,743 | 99,317 | 100,673 |
| - Total Operating Expenses | 38,074 | 38,386 | 42,782 | 45,666 | 52,050 | 53,408 | 53,316 | 55,581 | 55,072 | 56,320 | 58,065 | 59,001 | 59,806 |
| + Amortization | 624 | 448 | 390 | 222 | 266 | 307 | 340 | 367 | 392 | 414 | 432 | 449 | 463 |
| = Earnings Before Interest, Taxes, and Amortization (EBITA) | 20,987 | 24,546 | 27,551 | 28,276 | 28,736 | 30,196 | 32,952 | 35,055 | 38,024 | 38,898 | 40,109 | 40,765 | 41,330 |
| - Provision for Income Taxes | 5,252 | 6,253 | 4,921 | 5,557 | 5,661 | 5,944 | 6,482 | 6,899 | 7,475 | 7,635 | 7,863 | 7,980 | 8,079 |
| = Operating Profit (NOPLAT) | 15,735 | 18,293 | 22,630 | 22,718 | 23,075 | 24,252 | 26,470 | 28,156 | 30,549 | 31,263 | 32,246 | 32,785 | 33,251 |
| + Depreciation | 1,700 | 1,800 | 2,000 | 2,098 | 2,222 | 2,375 | 2,514 | 2,641 | 2,774 | 2,895 | 3,004 | 3,111 | 3,205 |
| - Increase in Operating Working Capital | 1,061 | 393 | (441) | 1,261 | 971 | 205 | (147) | 296 | 146 | 110 | 190 | 55 | 34 |
| - Investments in Property, Plant, and Equpment | (3,119) | (1,977) | (2,355) | (2,580) | (2,818) | (2,915) | (3,007) | (3,159) | (3,245) | (3,318) | (3,421) | (3,476) | (3,205) |
| - Investments in Goodwill and Acquired Intangibles | (749) | (343) | (429) | (7,486) | (403) | (417) | (430) | (452) | (464) | (474) | (489) | (497) | (463) |
| = Free Cash Flow | 14,628 | 18,166 | 21,405 | 16,012 | 23,046 | 23,500 | 25,400 | 27,481 | 29,761 | 30,476 | 31,529 | 31,979 | 32,822 |
| Terminal Value | | | | | | | | | | | | | 445,095 |
| Discounted FCFs of Forecast Period | | | | 14,634 | 19,251 | 17,941 | 17,723 | 17,525 | 17,346 | 16,235 | 15,351 | 14,230 | 13,348 |
| Discounted FCFs of Terminal Value | | | | | | | | | | | | | 181,014 |

## Additional Estimations for Using the APV - Microsoft Corporation

| | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
|---|---|---|---|---|---|---|---|---|---|---|
| Discounted FCFs of Forecast Period (Discounted at Unlevered Cost of Equity) | 14,615 | 19,200 | 17,871 | 17,630 | 17,411 | 17,210 | 16,086 | 15,190 | 14,063 | 13,174 |
| Discounted FCFs of Terminal Value (Discounted at Unlevered Cost of Equity) | | | | | | | | | | 178,653 |
| Present Value of Tax Shields (Discounted at Cost of Debt) | 74 | 70 | 65 | 60 | 59 | 66 | 73 | 79 | 85 | 91 |
| Present Value of Terminal Tax Shields (Discounted at Cost of Debt) | | | | | | | | | | 7,179 |

## Valuation of Microsoft Corporation

| | |
|---|---|
| Present Value of Forcast Period (2012-2021) | 163,584 |
| Present Value of Terminal Value | 181,014 |
| Enterprise Value | 344,598 |
| Net Debt | 4,263 |
| Equity Value | 340,335 |
| Estimated Value per Share | 40.09 |
| Over- or Underpriced | |
| Market Capitalization (2011) | 237,430 |
| Underpricing | -30.2% |

## Valuation of Microsoft Corporation Using APV

| | |
|---|---|
| Present Value of Forcast Period (2012-2021) | 162,449 |
| Present Value of Terminal Value | 178,653 |
| *Enterprise Value (1)* | *341,102* |
| Present Value of Forecasted Tax Shields (2012-2021) | 721 |
| Present Value of Terminal Tax Shields | 7,179 |
| *Present Value of Tax Shields (2)* | *7,900* |
| Probability of Default (based on Bond Prices) | 1.16% |
| Bankruptcy Costs, Percent of Value | 113.80% |
| Total Bankruptcy Costs | 388,174 |
| *Probability-Weighted Bankruptcy Costs (3)* | *4,503* |
| Enterprise Value ((1)+(2)-(3)) | 344,499 |
| Net Debt | 4,263 |
| Equity Value | 340,236 |
| Estimated Value Per Share | 40.07 |

## Valuation Parameters For MSFT

| | |
|---|---|
| Risk-free Interest Rate (US Treasury 10y) | 3.42% |
| Risk-Premium US | 5.20% |
| U.S. Marginal Tax Rate | 19.40% |
| Target D/E (Industry) | 7.49% |
| Target D/(D+E) | 6.97% |
| Cost of Debt | 3.16% |
| Unlevered Beta | 1.18 |
| Unlevered Rate of Return, Equity | 9.57% |
| Microsoft Levered Beta | 1.25 |
| Levered Rate of Return, Equity | 9.95% |
| WACC | 9.43% |
| Long-Term Sustainable Growth Rate | 1.90% |

### Income Statement - Activision Blizzard, Inc.

| | Past Performance | | | Forecasted Performance | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Revenue: | | | | | | | | | | | | | |
| Online Subscriptions | 1,248 | 1,230 | 1,357 | 1,416 | 1,477 | 1,540 | 1,607 | 1,676 | 1,738 | 1,791 | 1,836 | 1,870 | 1,893 |
| High Definition Platforms | 1,441 | 1,887 | 2,075 | 2,168 | 2,386 | 2,510 | 2,619 | 2,719 | 2,809 | 2,889 | 2,962 | 3,026 | 3,084 |
| Casual Platforms | 1,002 | 627 | 531 | 465 | 407 | 356 | 311 | 280 | 210 | 147 | 132 | 119 | 107 |
| PC and Other | 165 | 325 | 374 | 419 | 448 | 464 | 480 | 494 | 506 | 517 | 526 | 534 | 540 |
| Distribution | 423 | 378 | 418 | 417 | 420 | 424 | 428 | 433 | 439 | 445 | 452 | 458 | 465 |
| Total revenue | 4,279 | 4,447 | 4,755 | 4,884 | 5,137 | 5,294 | 5,445 | 5,602 | 5,702 | 5,790 | 5,907 | 6,007 | 6,089 |
| Operating expenses: | | | | | | | | | | | | | |
| Cost of Revenue - Product Costs | 1,432 | 1,350 | 1,134 | 1,165 | 1,225 | 1,262 | 1,299 | 1,336 | 1,360 | 1,381 | 1,409 | 1,433 | 1,452 |
| Cost of Revenue - Online Subscriptions | 212 | 241 | 238 | 250 | 263 | 271 | 279 | 287 | 292 | 297 | 303 | 308 | 312 |
| Cost of Revenue - Software Royalties and Amortization | 348 | 338 | 218 | 302 | 318 | 327 | 337 | 346 | 352 | 358 | 365 | 371 | 376 |
| Cost of Revenue - Intellectual Property Licenses | 315 | 197 | 165 | 217 | 228 | 235 | 242 | 249 | 253 | 257 | 262 | 267 | 270 |
| Product Development | 627 | 635 | 646 | 692 | 746 | 788 | 831 | 876 | 914 | 952 | 995 | 1,037 | 1,078 |
| Sales and Marketing | 544 | 516 | 545 | 582 | 612 | 631 | 649 | 667 | 679 | 690 | 703 | 715 | 725 |
| General and Administrative | 395 | 375 | 456 | 474 | 504 | 525 | 540 | 556 | 566 | 575 | 586 | 596 | 604 |
| Impairment of Intangible Assets | 409 | 326 | - | - | - | - | - | - | - | - | - | - | - |
| Restructuring | 23 | - | 25 | - | - | - | - | - | - | - | - | - | - |
| Total operating expenses | 4,305 | 3,978 | 3,427 | 3,682 | 3,897 | 4,041 | 4,177 | 4,318 | 4,417 | 4,508 | 4,624 | 4,727 | 4,818 |
| **Operating income (EBIT)** | **(26)** | **469** | **1,328** | **1,202** | **1,240** | **1,253** | **1,269** | **1,284** | **1,285** | **1,282** | **1,284** | **1,280** | **1,272** |
| Other income (expense): | | | | | | | | | | | | | |
| Interest Income | 15 | 8 | 14 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Interest Expense | (4) | (5) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) |
| Unrealized Gain (Loss) on Trading Securities | 3 | - | - | - | - | - | - | - | - | - | - | - | - |
| Unrealized Gain (Loss) on ARS Rights from UBS | (3) | - | - | - | - | - | - | - | - | - | - | - | - |
| Net Realized Gain on Investments | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Change in Fair Value of Other Financial Liability | 8 | 22 | - | - | - | - | - | - | - | - | - | - | - |
| Net Realized and Unrealized Loss on Foreign Exchange Contracts | (1) | (2) | (7) | - | - | - | - | - | - | - | - | - | - |
| Total other income (expense) | 18 | 23 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| **Income before income tax (EBT)** | **(8)** | **492** | **1,331** | **1,207** | **1,246** | **1,259** | **1,274** | **1,290** | **1,290** | **1,287** | **1,289** | **1,286** | **1,277** |
| Provision for income taxes | (121) | 74 | 246 | 229 | 237 | 239 | 242 | 245 | 245 | 245 | 245 | 244 | 243 |
| **Net income** | **113** | **418** | **1,085** | **978** | **1,009** | **1,019** | **1,032** | **1,045** | **1,045** | **1,043** | **1,044** | **1,041** | **1,034** |
| | | | | | | | | | | | | | |
| Earnings per share: | | | | | | | | | | | | | |
| Basic | 0.09 | 0.34 | 0.93 | 0.85 | 0.88 | 0.89 | 0.90 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.90 |
| Diluted | 0.09 | 0.33 | 0.92 | 0.85 | 0.87 | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.89 |
| Weighted-average shares outstanding: | | | | | | | | | | | | | |
| Basic | 1283 | 1222 | 1148 | 1148 | 1148 | 1148 | 1148 | 1148 | 1148 | 1148 | 1148 | 1148 | 1148 |
| Diluted | 1311 | 1236 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 |
| Cash dividends declared per common share | 0.000 | 0.150 | 0.165 | 0.256 | 0.264 | 0.266 | 0.270 | 0.273 | 0.273 | 0.272 | 0.273 | 0.272 | 0.270 |
| Total dividends declared | 0 | 189 | 194 | 293 | 303 | 306 | 310 | 313 | 314 | 313 | 313 | 312 | 310 |

### Balance Sheet - Activition Blizzard, Inc.

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| **Assets** | | | | | | | | | | | | | |
| Current Assets: | | | | | | | | | | | | | |
| Cash and Cash Equivalents | 2,768 | 2,812 | 3,165 | 3,865 | 4,743 | 5,596 | 6,459 | 7,302 | 8,100 | 8,891 | 9,696 | 10,491 | 11,273 |
| Short-Term Investments | 477 | 696 | 360 | 360 | 360 | 360 | 360 | 360 | 360 | 360 | 360 | 360 | 360 |
| Total Cash, Cash Equivalents and, Short-Term Investments | 3,245 | 3,508 | 3,525 | 4,225 | 5,103 | 5,956 | 6,819 | 7,662 | 8,460 | 9,251 | 10,056 | 10,851 | 11,633 |
| Accounts Receivable, Net of Allowances | 739 | 673 | 649 | 667 | 677 | 674 | 670 | 666 | 655 | 642 | 633 | 622 | 609 |
| Inventories, Net | 241 | 112 | 144 | 159 | 159 | 156 | 153 | 149 | 145 | 140 | 136 | 132 | 127 |
| Software Development | 224 | 147 | 137 | 169 | 169 | 169 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| Intellectual Property Licenses | 55 | 45 | 22 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| Deferred Income Taxes, Net | 498 | 648 | 507 | 507 | 507 | 507 | 507 | 507 | 507 | 507 | 507 | 507 | 507 |
| Other Current Assets | 327 | 299 | 396 | 396 | 396 | 396 | 396 | 396 | 396 | 396 | 396 | 396 | 396 |
| Total Current Assets | 5,329 | 5,432 | 5,380 | 6,163 | 7,052 | 7,899 | 8,754 | 9,591 | 10,373 | 11,146 | 11,938 | 12,717 | 13,482 |
| Long-Term Investments | 23 | 23 | 16 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| Software Development | 10 | 55 | 62 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| Intellectual Property Licenses | 28 | 28 | 12 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| Property and Equipment, Net | 138 | 169 | 163 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 |
| Other Assets | 9 | 15 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Intangible Assets, Net | 618 | 160 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Trademark and Trade Names | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 |
| Goodwill | 7,154 | 7,132 | 7,111 | 7,111 | 7,111 | 7,111 | 7,111 | 7,111 | 7,111 | 7,111 | 7,111 | 7,111 | 7,111 |
| Total Assets | 13,742 | 13,447 | 13,277 | 14,087 | 14,976 | 15,823 | 16,678 | 17,514 | 18,296 | 19,070 | 19,861 | 20,641 | 21,406 |
| | | | | | | | | | | | | | |
| **Liabilities and Shareholders' Equity** | | | | | | | | | | | | | |
| Current Liabilities: | | | | | | | | | | | | | |
| Accounts Payable | 302 | 363 | 390 | 430 | 440 | 441 | 442 | 443 | 439 | 434 | 431 | 427 | 421 |
| Short-Term Debt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Deferred Revenues | 1,426 | 1,726 | 1,472 | 1,512 | 1,642 | 1,745 | 1,849 | 1,925 | 1,960 | 1,990 | 2,030 | 2,064 | 2,093 |
| Accrued Expenses and Other Liabilities | 779 | 871 | 694 | 739 | 782 | 811 | 839 | 867 | 887 | 905 | 928 | 949 | 967 |
| Total Current Liabilities | 2,507 | 2,960 | 2,556 | 2,681 | 2,864 | 2,997 | 3,130 | 3,235 | 3,285 | 3,329 | 3,390 | 3,440 | 3,481 |
| | | | | | | | | | | | | | |
| Long-Term Debt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Deferred Income Taxes, Net | 270 | 120 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Other Liabilities | 209 | 164 | 174 | 174 | 174 | 174 | 174 | 174 | 174 | 174 | 174 | 174 | 174 |
| Total Liabilities | 2,986 | 3,244 | 2,785 | 2,910 | 3,093 | 3,226 | 3,359 | 3,464 | 3,514 | 3,558 | 3,619 | 3,669 | 3,710 |
| | | | | | | | | | | | | | |
| Stockholders' Equity: | | | | | | | | | | | | | |
| Common Stock | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Additional Paid-In Capital | 12,376 | 12,353 | 9,616 | 9,616 | 9,616 | 9,616 | 9,616 | 9,616 | 9,616 | 9,616 | 9,616 | 9,616 | 9,616 |
| Less: Treasury Stock, at cost | (1,235) | (2,194) | - | - | - | - | - | - | - | - | - | - | - |
| Retained Earnings | (361) | 57 | 948 | 1,561 | 2,267 | 2,980 | 3,703 | 4,434 | 5,166 | 5,896 | 6,627 | 7,356 | 8,080 |
| Acculated Other Comperehensive Loss | (24) | (13) | (72) | - | - | - | - | - | - | - | - | - | - |
| Total Shareholders' Equity | 10,756 | 10,203 | 10,492 | 11,177 | 11,883 | 12,596 | 13,319 | 14,050 | 14,782 | 15,512 | 16,243 | 16,972 | 17,696 |
| Total Liabilities and Shareholders' Equity | 13,742 | 13,447 | 13,277 | 14,087 | 14,976 | 15,823 | 16,678 | 17,514 | 18,296 | 19,070 | 19,861 | 20,641 | 21,406 |

### Debt Position - Activision Blizzard, Inc.

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Short-term debt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long-term debt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Operating leases | 417 | 474 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 |
| Total debt | 417 | 474 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 |
| Cash and cash equivalents | 2,768 | 2,812 | 3,165 | 3,865 | 4,743 | 5,596 | 6,459 | 7,302 | 8,100 | 8,891 | 9,696 | 10,491 | 11,273 |
| **Net debt** | **(2,351)** | **(2,338)** | **(2,777)** | **(3,477)** | **(4,355)** | **(5,208)** | **(6,071)** | **(6,914)** | **(7,712)** | **(8,503)** | **(9,308)** | **(10,103)** | **(10,885)** |
| Interest expense/Debt | 0.96% | 1.05% | 1.03% | 1.12% | 1.12% | 1.12% | 1.12% | 1.12% | 1.12% | 1.12% | 1.12% | 1.12% | 1.12% |

### Operating Working Capital - Activision Blizzard, Inc.

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Accounts Receivable, Net of Allowances | 739 | 673 | 649 | 667 | 677 | 674 | 670 | 666 | 655 | 642 | 633 | 622 | 609 |
| Inventories, Net | 241 | 112 | 144 | 159 | 159 | 156 | 153 | 149 | 145 | 140 | 136 | 132 | 127 |
| Software Development | 224 | 147 | 137 | 169 | 169 | 169 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| Intellectual Property Licenses | 55 | 45 | 22 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| Other Current Assets | 327 | 299 | 396 | 396 | 396 | 396 | 396 | 396 | 396 | 396 | 396 | 396 | 396 |
| Accounts Payable | 302 | 363 | 390 | 430 | 440 | 441 | 442 | 443 | 439 | 434 | 431 | 427 | 421 |
| Deferred Revenues | 1,426 | 1,726 | 1,472 | 1,512 | 1,642 | 1,745 | 1,849 | 1,925 | 1,960 | 1,990 | 2,030 | 2,064 | 2,093 |
| Accrued Expenses and Other Liabilities | 779 | 871 | 694 | 739 | 782 | 811 | 839 | 867 | 887 | 905 | 928 | 949 | 967 |
| Working Capital | (921) | (1,684) | (1,208) | (1,250) | (1,422) | (1,561) | (1,701) | (1,814) | (1,880) | (1,941) | (2,015) | (2,081) | (2,139) |
| Change in Net Working Capital | (558) | (763) | 476 | (42) | (172) | (139) | (140) | (112) | (66) | (61) | (74) | (66) | (58) |

### Free Cash Flow - Activision Blizzard, Inc.

| *Direct Method* | Past Performance | | | Forecasted Performance | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Total Revenues | 4,279 | 4,447 | 4,755 | 4,884 | 5,137 | 5,294 | 5,445 | 5,602 | 5,702 | 5,790 | 5,907 | 6,007 | 6,089 |
| - Total Operating Expenses | 4,305 | 3,978 | 3,427 | 3,682 | 3,897 | 4,041 | 4,177 | 4,318 | 4,417 | 4,508 | 4,624 | 4,727 | 4,818 |
| + Amortization | 585 | 449 | 331 | 252 | 294 | 294 | 294 | 294 | 294 | 294 | 294 | 294 | 294 |
| = Earnings Before Interest, Taxes, and Amortization (EBITA) | 559 | 918 | 1,659 | 1,453 | 1,534 | 1,547 | 1,562 | 1,578 | 1,579 | 1,575 | 1,577 | 1,574 | 1,565 |
| - Provision for Income Taxes | (121) | 74 | 246 | 229 | 237 | 239 | 242 | 245 | 245 | 245 | 245 | 244 | 243 |
| = Operating Profit (NOPLAT) | 680 | 844 | 1,413 | 1,224 | 1,297 | 1,308 | 1,320 | 1,333 | 1,333 | 1,331 | 1,332 | 1,329 | 1,322 |
| + Depreciation | 76 | 68 | 75 | 69 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 |
| - Increase in Operating Working Capital | 558 | 763 | (476) | 42 | 172 | 139 | 140 | 112 | 66 | 61 | 74 | 66 | 58 |
| - Investments in Property, Plant, and Equpment | (65) | (99) | (69) | (100) | (82) | (82) | (82) | (82) | (82) | (82) | (82) | (82) | (82) |
| - Investments in Goodwill and Acquired Intangibles | (355) | (277) | (217) | (294) | (294) | (294) | (294) | (294) | (294) | (294) | (294) | (294) | (294) |
| = Free Cash Flow | 894 | 1,299 | 726 | 941 | 1,176 | 1,153 | 1,167 | 1,152 | 1,106 | 1,098 | 1,113 | 1,102 | 1,087 |
| Terminal Value | | | | | | | | | | | | | 12,019 |
| Discounted FCFs of Forecast Period | | | | 847 | 952 | 841 | 765 | 680 | 587 | 525 | 479 | 427 | 379 |
| Discounted FCFs of Terminal Value | | | | | | | | | | | | | 4,188 |

### Valuation of Activision Blizzard, Inc.

| | |
|---|---|
| Present Value of Forcast Period (2012-2021) | 6,482 |
| Present Value of Terminal Value | 4,188 |
| Enterprise Value | 10,670 |
| Net Debt | (2,777) |
| Equity | 13,447 |
| Estimated Value per Share | 11.71 |
| Over- or Underpriced | |
| Market Capitalization (2011 average) | 13,240 |
| Underpricing | -1.5% |

### Valuation Parameters For ATVI

| | |
|---|---|
| Risk-Free Interest Rate (US Treasury 10y) | 3.42% |
| Risk-Premium US | 5.20% |
| U.S. Marginal Tax Rate | 19.00% |
| Target D/E (Industry) | 0.00% |
| Target D/(D+E) | 0.00% |
| Cost of Debt | 0.00% |
| Unlevered Beta | 1.48 |
| Unlevered Rate of Return, Equity | 11.12% |
| Activision Blizzard Levered Beta | 1.48 |
| Levered Rate of Return, Equity | 11.12% |
| WACC | 11.12% |
| Long-Term Sustainable Growth Rate | 1.90% |

© Robert Stenmark

# Appendix 15: Combined Company Valuation Without Synergies

**Integrated Income Statement - MSFT-ATVI**

| | Past Performance | | | Forecasted Performance | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Revenue: | | | | | | | | | | | | | |
| Windows & Windows Live Division | 15,563 | 18,792 | 18,778 | 19,591 | 20,281 | 20,934 | 21,608 | 22,304 | 22,943 | 23,529 | 24,063 | 24,549 | 24,990 |
| Server and Tools Division | 14,686 | 15,390 | 17,107 | 18,281 | 19,366 | 20,360 | 21,264 | 22,081 | 22,815 | 23,471 | 24,054 | 24,571 | 25,028 |
| Online Services Division | 2,110 | 2,200 | 2,528 | 2,955 | 3,323 | 3,631 | 3,833 | 4,014 | 4,176 | 4,319 | 4,445 | 4,554 | 4,641 |
| Microsoft Business Division | 19,211 | 19,345 | 21,986 | 22,218 | 25,107 | 25,349 | 25,594 | 27,590 | 27,830 | 28,048 | 29,361 | 29,547 | 29,715 |
| Entertainment and Devices Division | 10,695 | 10,671 | 13,471 | 14,820 | 16,774 | 17,484 | 18,216 | 18,979 | 19,715 | 20,280 | 20,751 | 21,110 | 21,380 |
| Unallocated and other | 451 | 533 | 828 | 737 | 805 | 833 | 859 | 903 | 927 | 948 | 977 | 993 | 1,007 |
| Total revenue | 62,716 | 66,931 | 74,698 | 78,603 | 85,656 | 88,591 | 91,374 | 95,872 | 98,407 | 100,594 | 103,650 | 105,324 | 106,762 |
| Operating expenses: | | | | | | | | | | | | | |
| Cost of revenue | 14,462 | 14,521 | 17,332 | 17,392 | 20,607 | 21,310 | 20,391 | 21,147 | 21,697 | 22,172 | 22,835 | 23,205 | 23,522 |
| Research and development | 9,637 | 9,349 | 9,689 | 11,085 | 12,098 | 12,531 | 12,945 | 13,602 | 12,000 | 12,289 | 12,684 | 12,914 | 13,117 |
| Sales and Marketing | 13,423 | 13,730 | 14,485 | 15,621 | 17,521 | 17,686 | 18,049 | 18,746 | 19,220 | 19,650 | 20,252 | 20,578 | 20,859 |
| General and administrative | 4,425 | 4,438 | 4,678 | 5,250 | 5,720 | 5,922 | 6,107 | 6,404 | 6,572 | 6,716 | 6,918 | 7,030 | 7,126 |
| Other operational expenses | 432 | 326 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total operating expenses | 42,379 | 42,364 | 46,209 | 49,348 | 55,946 | 57,449 | 57,492 | 59,899 | 59,489 | 60,828 | 62,689 | 63,728 | 64,624 |
| **Operating income (EBIT)** | **20,337** | **24,567** | **28,489** | **29,255** | **29,710** | **31,142** | **33,881** | **35,972** | **38,917** | **39,766** | **40,961** | **41,597** | **42,138** |
| Windows & Windows Live Division | 9,372 | 12,253 | 11,968 | 12,361 | 12,545 | 13,170 | 14,370 | 15,285 | 16,582 | 16,957 | 17,483 | 17,765 | 18,007 |
| Server and Tools | 4,627 | 5,320 | 6,453 | 6,665 | 6,764 | 7,101 | 7,748 | 8,241 | 8,941 | 9,143 | 9,427 | 9,578 | 9,709 |
| Online Services Division | (1,749) | (2,410) | (2,638) | (2,725) | (2,765) | (2,903) | (3,167) | (3,369) | (3,655) | (3,738) | (3,854) | (3,916) | (3,969) |
| Microsoft Business Division | 11,153 | 11,642 | 13,827 | 14,281 | 14,493 | 15,216 | 16,602 | 17,659 | 19,158 | 19,591 | 20,199 | 20,524 | 20,804 |
| Entertainment and Devices Division | 262 | 1,042 | 2,463 | 2,374 | 2,430 | 2,502 | 2,632 | 2,734 | 2,858 | 2,890 | 2,942 | 2,965 | 2,979 |
| Reconciling amounts | (3,328) | (3,280) | (3,584) | (3,702) | (3,757) | (3,944) | (4,303) | (4,577) | (4,966) | (5,078) | (5,236) | (5,320) | (5,393) |
| Other income (expense): | | | | | | | | | | | | | |
| Dividends and interest income | 759 | 851 | 914 | 970 | 1,059 | 1,095 | 1,129 | 1,186 | 1,218 | 1,245 | 1,283 | 1,304 | 1,322 |
| Interest expense | (42) | (156) | (299) | (381) | (395) | (390) | (374) | (354) | (360) | (414) | (469) | (526) | (584) |
| Net recognized gains (losses) on investments | (125) | 348 | 439 | 296 | 341 | 341 | 341 | 341 | 341 | 341 | 341 | 341 | 341 |
| Net losses on derivatives | (558) | (140) | (77) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) |
| Net gains (losses) on foreign currency remeasurements | (510) | (1) | (33) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | (48) | 36 | (31) | (29) | (32) | (33) | (34) | (35) | (36) | (37) | (38) | (39) | (40) |
| Total other income (expense) | (524) | 938 | 913 | 598 | 715 | 755 | 804 | 880 | 904 | 877 | 859 | 822 | 781 |
| **Income before income taxes (EBT)** | **19,813** | **25,505** | **29,402** | **29,853** | **30,424** | **31,897** | **34,686** | **36,852** | **39,821** | **40,643** | **41,820** | **42,418** | **42,920** |
| Provision for income taxes | 5,131 | 6,327 | 5,167 | 5,787 | 5,897 | 6,183 | 6,724 | 7,144 | 7,720 | 7,880 | 8,108 | 8,224 | 8,321 |
| **Net income** | **14,682** | **19,178** | **24,235** | **24,067** | **24,527** | **25,714** | **27,962** | **29,708** | **32,101** | **32,763** | **33,712** | **34,194** | **34,598** |
| Total Cash Dividends Declared | 4,651 | 4,772 | 5,628 | 6,437 | 6,561 | 6,877 | 7,475 | 7,940 | 8,577 | 8,753 | 9,006 | 9,134 | 9,241 |

© Robert Stenmark

## Integrated Balance Sheets - MSFT-ATVI

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| **Assets** | | | | | | | | | | | | | |
| Current Assets: | | | | | | | | | | | | | |
| Cash and Cash Equivalents | 8,844 | 8,317 | 12,775 | 16,417 | 34,764 | 52,850 | 72,150 | 94,011 | 118,962 | 144,445 | 170,795 | 197,418 | 224,740 |
| Short-Term investments | 25,848 | 31,979 | 43,522 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 |
| Total cash, cash equivalents, and short term investments | 34,692 | 40,296 | 56,297 | 69,918 | 88,265 | 106,351 | 125,651 | 147,512 | 172,463 | 197,946 | 224,296 | 250,919 | 278,241 |
| Accounts Receivable, Net of Allowances | 11,931 | 13,687 | 15,636 | 15,756 | 17,159 | 17,724 | 18,259 | 19,143 | 19,631 | 20,048 | 20,640 | 20,951 | 21,216 |
| Inventories, Net | 958 | 852 | 1,516 | 1,386 | 1,634 | 1,682 | 1,601 | 1,653 | 1,689 | 1,719 | 1,764 | 1,786 | 1,804 |
| Software Development and Intellectual Property Licenses | 279 | 192 | 159 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 |
| Deferred Income Taxes, Net | 2,711 | 2,832 | 2,974 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 |
| Other | 4,038 | 3,249 | 3,716 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 |
| Total Current Assets | 54,609 | 61,108 | 80,298 | 93,132 | 113,129 | 131,828 | 151,582 | 174,380 | 199,853 | 225,784 | 252,771 | 279,727 | 307,332 |
| Property and Equipment: | | | | | | | | | | | | | |
| Opening balance | 6,391 | 7,673 | 7,799 | 8,325 | 8,839 | 9,435 | 9,976 | 10,469 | 10,988 | 11,458 | 11,882 | 12,299 | 12,664 |
| Additions | 3,184 | 2,076 | 2,424 | 2,680 | 2,900 | 2,998 | 3,090 | 3,242 | 3,327 | 3,400 | 3,503 | 3,558 | 3,287 |
| Revaluations/Disposals | (126) | (82) | 177 | - | - | - | - | - | - | - | - | - | - |
| Depreciation | (1,776) | (1,868) | (2,075) | (2,167) | (2,304) | (2,457) | (2,596) | (2,723) | (2,856) | (2,977) | (3,086) | (3,193) | (3,287) |
| Closing balance | 7,673 | 7,799 | 8,325 | 8,839 | 9,435 | 9,976 | 10,469 | 10,988 | 11,458 | 11,882 | 12,299 | 12,664 | 12,664 |
| Equity and Other Investments | 4,956 | 7,777 | 10,881 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 |
| Software Development | 10 | 55 | 62 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| Intellectual Property Licenses | 28 | 28 | 12 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| Trademark and Trade Names | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 |
| Goodwill | 19,657 | 19,526 | 19,692 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 |
| Intangible Assets: | | | | | | | | | | | | | |
| Opening balance | 3,256 | 2,377 | 1,318 | 832 | 978 | 1,115 | 1,225 | 1,315 | 1,399 | 1,471 | 1,532 | 1,589 | 1,637 |
| Additions | 354 | 343 | 243 | 387 | 421 | 435 | 448 | 470 | 482 | 493 | 507 | 515 | 482 |
| Disposals | (338) | (824) | (266) | - | - | - | - | - | - | - | - | - | - |
| Amortization | (895) | (578) | (463) | (241) | (285) | (326) | (358) | (385) | (411) | (432) | (450) | (467) | (482) |
| Closing balance | 2,377 | 1,318 | 832 | 978 | 1,115 | 1,225 | 1,315 | 1,399 | 1,471 | 1,532 | 1,589 | 1,637 | 1,637 |
| Deferred Income Taxes | 279 | - | - | - | - | - | - | - | - | - | - | - | - |
| Other Long-Term Assets | 1,608 | 1,516 | 1,446 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 |
| Total Assets | 91,630 | 99,560 | 121,981 | 140,759 | 161,490 | 180,839 | 201,176 | 224,577 | 250,593 | 277,008 | 304,470 | 331,839 | 359,443 |
| **Liabilities and Shareholders' Equity** | | | | | | | | | | | | | |
| Current Liabilities: | | | | | | | | | | | | | |
| Accounts Payable | 3,626 | 4,388 | 4,587 | 4,900 | 5,811 | 5,998 | 5,716 | 5,917 | 6,061 | 6,183 | 6,359 | 6,450 | 6,526 |
| Short-Term Debt | 2,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - |
| Accrued Compensation and Expenses | 3,935 | 4,154 | 4,269 | 4,421 | 4,711 | 4,782 | 4,840 | 4,974 | 5,008 | 5,023 | 5,076 | 5,066 | 5,045 |
| Income Taxes | 725 | 1,074 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| Short-Term Unearned Revenue | 14,429 | 15,378 | 17,194 | 17,362 | 18,953 | 19,654 | 20,324 | 21,333 | 21,891 | 22,373 | 23,045 | 23,418 | 23,737 |
| Securities Lending Payable | 1,684 | 182 | 1,208 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 |
| Other | 3,142 | 2,931 | 3,492 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 |
| Total Current Liablities | 29,541 | 29,107 | 31,330 | 31,484 | 34,277 | 35,235 | 35,681 | 37,026 | 37,761 | 38,380 | 39,280 | 39,735 | 40,110 |
| Long Term Debt | 3,746 | 4,939 | 11,921 | 12,368 | 12,201 | 11,699 | 11,050 | 11,251 | 12,958 | 14,702 | 16,497 | 18,320 | 20,165 |
| Long-Term Unearned Revenue | 1,281 | 1,178 | 1,398 | 1,493 | 1,631 | 1,687 | 1,740 | 1,828 | 1,878 | 1,920 | 1,980 | 2,012 | 2,039 |
| Deferred Income Taxes | 270 | 349 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 |
| Other Long-Term Liabilites | 6,478 | 7,609 | 8,246 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 |
| Total Liabilities | 41,316 | 43,182 | 54,406 | 55,555 | 58,318 | 58,831 | 58,681 | 60,315 | 62,807 | 65,212 | 67,967 | 70,276 | 72,524 |
| Stockholders' Equity: | | | | | | | | | | | | | |
| Common Stock and Paid-In Capital | 74,758 | 75,209 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 |
| Less: Treasury Stock, at cost | (1,235) | (2,194) | - | - | - | - | - | - | - | - | - | - | - |
| Retained Deficit/Earnings, incl. Comprehensive Income: | (23,209) | (16,637) | (5,456) | 12,174 | 30,140 | 48,978 | 69,464 | 91,232 | 114,755 | 138,765 | 163,472 | 188,532 | 213,889 |
| Total Shareholders' Equity | 50,314 | 56,378 | 67,575 | 85,205 | 103,171 | 122,009 | 142,495 | 164,263 | 187,786 | 211,796 | 236,503 | 261,563 | 286,920 |
| Total Liabilities and Shareholders' Equity | 91,630 | 99,560 | 121,981 | 140,759 | 161,490 | 180,839 | 201,176 | 224,577 | 250,593 | 277,008 | 304,470 | 331,839 | 359,443 |

## Integrated Debt Position - MSFT-ATVI

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Short-term debt | 2,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - |
| Long-term debt | 3,746 | 4,939 | 11,921 | 12,368 | 12,201 | 11,699 | 11,050 | 11,251 | 12,958 | 14,702 | 16,497 | 18,320 | 20,165 |
| Operating leases | 2,802 | 2,372 | 2,340 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 |
| Total debt | 8,548 | 8,311 | 14,261 | 14,834 | 14,667 | 14,165 | 13,516 | 13,717 | 15,424 | 17,168 | 18,964 | 20,786 | 22,631 |
| Cash and cash equivalents | 8,844 | 8,317 | 12,775 | 16,417 | 34,764 | 52,850 | 72,150 | 94,011 | 118,962 | 144,445 | 170,795 | 197,418 | 224,740 |
| **Net debt** | **(296)** | **(6)** | **1,486** | **(1,583)** | **(20,097)** | **(38,685)** | **(58,634)** | **(80,294)** | **(103,537)** | **(127,277)** | **(151,832)** | **(176,632)** | **(202,109)** |
| Interest expense/Debt | 0.49% | 1.88% | 2.10% | 2.57% | 2.70% | 2.75% | 2.77% | 2.58% | 2.33% | 2.41% | 2.47% | 2.53% | 2.58% |

© Robert Stenmark

### Integrated Operating Working Capital - MSFT-ATVI

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Accounts Receivables | 11,931 | 13,687 | 15,636 | 15,756 | 17,159 | 17,724 | 18,259 | 19,143 | 19,631 | 20,048 | 20,640 | 20,951 | 21,216 |
| Inventories | 958 | 852 | 1,516 | 1,386 | 1,634 | 1,682 | 1,601 | 1,653 | 1,689 | 1,719 | 1,764 | 1,786 | 1,804 |
| Software Development and Intellectual Property Licenses | 279 | 192 | 159 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 |
| Other Current Assets | 4,038 | 3,249 | 3,716 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 |
| Accounts Payable | 3,626 | 4,388 | 4,587 | 4,900 | 5,811 | 5,998 | 5,716 | 5,917 | 6,061 | 6,183 | 6,359 | 6,450 | 6,526 |
| Accrued Compensation and Expenses | 3,935 | 4,154 | 4,269 | 4,421 | 4,711 | 4,782 | 4,840 | 4,974 | 5,008 | 5,023 | 5,076 | 5,066 | 5,045 |
| Short-Term Unearned Revenue | 14,429 | 15,378 | 17,194 | 17,362 | 18,953 | 19,654 | 20,324 | 21,333 | 21,891 | 22,373 | 23,045 | 23,418 | 23,737 |
| Working Capital | (4,784) | (5,940) | (5,023) | (6,326) | (7,469) | (7,813) | (7,806) | (8,215) | (8,427) | (8,598) | (8,861) | (8,983) | (9,075) |
| | | | | | | | | | | | | | |
| Change in Net Working Capital | (1,619) | (1,156) | 917 | (1,303) | (1,143) | (345) | 7 | (408) | (212) | (171) | (263) | (122) | (92) |

### Integrated Free Cash Flow - MSFT-ATVI

| *Direct Method* | Past Performance | | | Forecasted Performance | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Total Revenues | 62,716 | 66,931 | 74,698 | 78,603 | 85,656 | 88,591 | 91,374 | 95,872 | 98,407 | 100,594 | 103,650 | 105,324 | 106,762 |
| - Total Operating Expenses | 42,379 | 42,364 | 46,209 | 49,348 | 55,946 | 57,449 | 57,492 | 59,899 | 59,489 | 60,828 | 62,689 | 63,728 | 64,624 |
| + Amortization | 1,209 | 897 | 721 | 474 | 560 | 601 | 633 | 660 | 686 | 707 | 725 | 742 | 757 |
| = Earnings Before Interest, Taxes, and Amortization (EBITA) | 21,546 | 25,464 | 29,210 | 29,729 | 30,269 | 31,743 | 34,515 | 36,633 | 39,603 | 40,473 | 41,686 | 42,339 | 42,895 |
| | | | | | | | | | | | | | |
| - Provision for Income Taxes | 5,131 | 6,327 | 5,167 | 5,787 | 5,897 | 6,183 | 6,724 | 7,144 | 7,720 | 7,880 | 8,108 | 8,224 | 8,321 |
| = Operating Profit (NOPLAT) | 16,415 | 19,137 | 24,043 | 23,942 | 24,372 | 25,560 | 27,791 | 29,489 | 31,883 | 32,594 | 33,578 | 34,115 | 34,574 |
| | | | | | | | | | | | | | |
| + Depreciation | 1,776 | 1,868 | 2,075 | 2,167 | 2,304 | 2,457 | 2,596 | 2,723 | 2,856 | 2,977 | 3,086 | 3,193 | 3,287 |
| - Increase in Operating Working Capital | 1,619 | 1,156 | (917) | 1,303 | 1,143 | 345 | (7) | 408 | 212 | 171 | 263 | 122 | 92 |
| - Investments in Property, Plant, and Equpment | (3,184) | (2,076) | (2,424) | (2,680) | (2,900) | (2,998) | (3,090) | (3,242) | (3,327) | (3,400) | (3,503) | (3,558) | (3,287) |
| - Investments in Goodwill and Acquired Intangibles | (1,104) | (620) | (646) | (7,779) | (696) | (710) | (723) | (745) | (757) | (768) | (782) | (790) | (757) |
| = Free Cash Flow | 15,522 | 19,465 | 22,131 | 16,953 | 24,222 | 24,654 | 26,567 | 28,633 | 30,867 | 31,574 | 32,642 | 33,081 | 33,909 |
| | | | | | | | | | | | | | |
| Terminal Value | | | | | | | | | | | | | 459,309 |
| | | | | | | | | | | | | | |
| Discounted FCFs of Forecast Period | | | | 15,493 | 20,230 | 18,817 | 18,531 | 18,253 | 17,982 | 16,810 | 15,882 | 14,710 | 13,780 |
| Discounted FCFs of Terminal Value | | | | | | | | | | | | | 186,647 |

### Valuation of Merged Company Without Synergy

| | |
|---|---|
| Present Value of Forcast Period (2012-2021) | 170,487 |
| Present Value of Terminal Value | 186,647 |
| Enterprise Value | 357,134 |
| | |
| Net Debt | 1,486 |
| Equity | 355,648 |

### Valuation Parameters For MSFT-ATVI

| | |
|---|---|
| Risk-Free Interest Rate (US Treasury 10y) | 3.42% |
| Risk-Premium US | 5.20% |
| U.S. Marginal Tax Rate | 19.39% |
| | |
| Target D/E | 7.03% |
| Target D/(D+E) | 6.57% |
| Cost of Debt | 3.16% |
| | |
| Unlevered Beta | 1.19 |
| Unlevered Rate of Return, Equity | 9.60% |
| Merged Company Levered Beta | 1.26 |
| Levered Rate of Return, Equity | 9.96% |
| | |
| WACC | 9.42% |
| Long-Term Sustainable Growth Rate | 1.90% |

© Robert Stenmark

## Appendix 16: Average Operational Expenses for the EDD

Since Microsoft does not report exact financial data on expenses related to each division, the expenses have been calculated based on reported increase in expenses (amounts and percentages). The average percent reported in Table 15 is based on the average costs of the EDD division to the total of the given expense.

**Costs Attributable to EDD Division**

| | 2009 | 2010 | 2011 |
|---|---|---|---|
| Increase (Decrease) in Cost of revenue | *N/A* | (496) | 1,800 |
| (in percent) | *N/A* | -12% | 49% |
| Calculated Cost of Revenue | 4,133 | 3,673 | 5,473 |
| Percent of Total Cost of Revenue | 34.0% | 29.6% | 35.1% |
| Increase (Decrease) in Research and Deveopment Expenses | *N/A* | 54 | 119 |
| (in percent) | *N/A* | 6% | 12% |
| Calculated Research and Deveopment Expenses | 900 | 992 | 1,111 |
| Percent of Total Research and Deveopment Expenses | 10.0% | 11.4% | 12.3% |
| Increase (Decrease) in Sales and Marketing Expenses | *N/A* | (75) | 90 |
| (in percent) | *N/A* | -9% | 12% |
| Calculated Sales and Marketing Expenses | 833 | 750 | 840 |
| Percent of Total Sales and Marketing Expenses | 6.5% | 5.7% | 6.0% |
| Total Operational Expenses in EDD | 6065 | 5550 | 7589 |
| Residual is General and Administrative Expenses | 198 | 135 | 165 |
| Percent of Total General and Administrative Expenses | 4.9% | 3.3% | 3.9% |

*Calculation of Costs Attributable to the Entertainment and Devices Divison*

In order to calculate an estimate for the expenses based on the reported increase in amount of expenditure and reported increase in percent, the following formula has been applied:

$$Estimate\ of\ Given\ Expense_{t-1} = \frac{Increase\ in\ Given\ Expense\ Group_t}{Percentage\ Increase\ in\ Given\ Expense\ Group_t}$$

Furthermore, to find the proportion of expenses to the total expenses of the company, this formula was applied:

$$Proportion\ of\ total = \frac{Estimate\ of\ Given\ Expense}{Company\ Total\ of\ Given\ Expense}$$

This, for example, means that in 2009 the cost of revenue for the Entertainment and Devices Division was 34.0% of the total cost of revenue for Microsoft.

## Appendix 17: Calculation of Collection and Payment Periods

This appendix is a supplement to Table XX, and summarizes how the various estimates in the table are calculated. In order to calculate the average collection period for accounts receivable (called "Average Days Receivable" in the table), the following formula has been applied:

$$Average\ Collection\ Period\ (in\ days) = \left( \frac{Accounts\ Receivable}{Total\ Revenues} \right) \cdot 365$$

Similarly, the formula applied to calculate the average payment period for accounts payable (called "Average Days Payable" in the table) is the following:

$$Average\ Payment\ Period\ (in\ days) = \left( \frac{Accounts\ Payable}{Cost\ of\ Revenue} \right) \cdot 365$$

The reason why the formulas are multiplied by 365 is to convert the fraction into days (the number 365, represents the number of days in a year). Furthermore, since the average payment period for Microsoft is longer than Activision Blizzard's equivalent, it is desirable to increase Activision Blizzard's Accounts Payable to reflect Microsoft's payment term. In order to do this, the following formula has been applied to Activision Blizzard's financials:

$$Accounts\ Payable\ Balance\ (ATVI) = \left( \frac{Average\ Payment\ Period\ (MSFT)}{365} \right) \cdot Cost\ of\ Revenue$$

This formula produces a value that reflects Microsoft's payment terms in relation to the Activision Blizzard's cost of revenues (also known as Cost of Goods Sold – COGS).

© Robert Stenmark

# Appendix 18: Combined Company Valuation With Synergies

**Integrated Income Statement - MSFT-ATVI with Synergies**

| | Past Performance | | | Forecasted Performance | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Revenue: | | | | | | | | | | | | | |
| Windows & Windows Live Division | 15,563 | 18,792 | 18,778 | 19,591 | 20,281 | 20,934 | 21,608 | 22,304 | 22,943 | 23,529 | 24,063 | 24,549 | 24,990 |
| Server and Tools Division | 14,686 | 15,390 | 17,107 | 18,281 | 19,366 | 20,360 | 21,264 | 22,081 | 22,815 | 23,471 | 24,054 | 24,571 | 25,028 |
| Online Services Division | 2,110 | 2,200 | 2,528 | 2,955 | 3,323 | 3,631 | 3,833 | 4,014 | 4,176 | 4,319 | 4,445 | 4,554 | 4,641 |
| Microsoft Business Division | 19,211 | 19,345 | 21,986 | 22,218 | 25,107 | 25,349 | 25,594 | 27,590 | 27,830 | 28,048 | 29,361 | 29,547 | 29,715 |
| Entertainment and Devices Division | 10,695 | 10,671 | 13,471 | 14,820 | 17,205 | 17,812 | 18,559 | 19,338 | 20,090 | 20,667 | 21,146 | 21,512 | 21,788 |
| Unallocated and other | 451 | 533 | 828 | 737 | 805 | 833 | 859 | 903 | 927 | 948 | 977 | 993 | 1,007 |
| Total revenue | 62,716 | 66,931 | 74,698 | 78,603 | 86,087 | 88,919 | 91,717 | 96,230 | 98,781 | 100,981 | 104,046 | 105,727 | 107,170 |
| Operating expenses: | | | | | | | | | | | | | |
| Cost of revenue | 14,462 | 14,521 | 17,332 | 17,392 | 20,508 | 21,208 | 20,287 | 21,040 | 21,588 | 22,061 | 22,721 | 23,089 | 23,404 |
| Research and development | 9,637 | 9,349 | 9,689 | 11,085 | 12,008 | 12,444 | 12,855 | 13,498 | 11,887 | 12,172 | 12,563 | 12,787 | 13,006 |
| Sales and Marketing | 13,423 | 13,730 | 14,485 | 15,387 | 17,347 | 17,536 | 17,924 | 18,627 | 19,125 | 19,569 | 20,162 | 20,489 | 20,767 |
| General and administrative | 4,425 | 4,438 | 4,678 | 5,250 | 5,331 | 5,515 | 5,692 | 5,977 | 6,143 | 6,284 | 6,476 | 6,581 | 6,670 |
| Other operational expenses | 432 | 326 | 25 | 253 | 127 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total operating expenses | 42,379 | 42,364 | 46,209 | 49,367 | 55,320 | 56,745 | 56,758 | 59,142 | 58,743 | 60,085 | 61,921 | 62,945 | 63,847 |
| **Operating income (EBIT)** | **20,337** | **24,567** | **28,489** | **29,236** | **30,767** | **32,174** | **34,959** | **37,088** | **40,038** | **40,895** | **42,124** | **42,782** | **43,323** |
| Windows & Windows Live Division | 9,372 | 12,253 | 11,968 | 12,361 | 12,545 | 13,170 | 14,370 | 15,285 | 16,582 | 16,957 | 17,483 | 17,765 | 18,007 |
| Server and Tools | 4,627 | 5,320 | 6,453 | 6,665 | 6,764 | 7,101 | 7,748 | 8,241 | 8,941 | 9,143 | 9,427 | 9,578 | 9,709 |
| Online Services Division | (1,749) | (2,410) | (2,638) | (2,725) | (2,765) | (2,903) | (3,167) | (3,369) | (3,655) | (3,738) | (3,854) | (3,916) | (3,969) |
| Microsoft Business Division | 11,153 | 11,642 | 13,827 | 14,281 | 14,493 | 15,216 | 16,602 | 17,659 | 19,158 | 19,591 | 20,199 | 20,524 | 20,804 |
| Entertainment and Devices Division | 262 | 1,042 | 2,463 | 2,374 | 2,861 | 2,830 | 2,975 | 3,092 | 3,232 | 3,276 | 3,337 | 3,367 | 3,387 |
| Reconciling amounts | (3,328) | (3,280) | (3,584) | (3,702) | (3,757) | (3,944) | (4,303) | (4,577) | (4,966) | (5,078) | (5,236) | (5,320) | (5,393) |
| Other income (expense): | | | | | | | | | | | | | |
| Dividends and interest income | 759 | 851 | 914 | 970 | 1,059 | 1,095 | 1,129 | 1,186 | 1,218 | 1,245 | 1,283 | 1,304 | 1,322 |
| Interest expense | (42) | (156) | (299) | (381) | (395) | (390) | (374) | (354) | (360) | (414) | (469) | (526) | (584) |
| Net recognized gains (losses) on investments | (125) | 348 | 439 | 296 | 341 | 341 | 341 | 341 | 341 | 341 | 341 | 341 | 341 |
| Net losses on derivatives | (558) | (140) | (77) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) | (258) |
| Net gains (losses) on foreign currency remeasurements | (510) | (1) | (33) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | (48) | 36 | (31) | (29) | (32) | (33) | (34) | (35) | (36) | (37) | (38) | (39) | (40) |
| Total other income (expense) | (524) | 938 | 913 | 598 | 715 | 755 | 804 | 880 | 904 | 877 | 859 | 822 | 781 |
| **Income before income taxes (EBT)** | **19,813** | **25,505** | **29,402** | **29,834** | **31,481** | **32,929** | **35,763** | **37,968** | **40,942** | **41,772** | **42,983** | **43,604** | **44,104** |
| Provision for income taxes | 5,131 | 6,327 | 5,167 | 5,783 | 6,102 | 6,383 | 6,933 | 7,360 | 7,938 | 8,098 | 8,333 | 8,454 | 8,321 |
| **Net income** | **14,682** | **19,178** | **24,235** | **24,051** | **25,379** | **26,546** | **28,830** | **30,607** | **33,005** | **33,674** | **34,650** | **35,150** | **35,783** |
| Total Cash Dividends Declared | 4,651 | 4,772 | 5,628 | 6,437 | 6,561 | 6,877 | 7,475 | 7,940 | 8,577 | 8,753 | 9,006 | 9,134 | 9,241 |

## Integrated Balance Sheets - MSFT-ATVI with Synergies

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| **Assets** | | | | | | | | | | | | | |
| Current Assets: | | | | | | | | | | | | | |
| Cash and Cash Equivalents | 8,844 | 8,317 | 12,775 | 16,411 | 35,783 | 54,594 | 74,787 | 97,573 | 123,450 | 149,868 | 177,182 | 204,785 | 233,315 |
| Short-Term investments | 25,848 | 31,979 | 43,522 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 | 53,501 |
| Total cash, cash equivalents, and short term investments | 34,692 | 40,296 | 56,297 | 69,912 | 89,284 | 108,095 | 128,288 | 151,074 | 176,951 | 203,369 | 230,683 | 258,286 | 286,816 |
| Accounts Receivable, Net of Allowances | 11,931 | 13,687 | 15,636 | 15,756 | 17,159 | 17,724 | 18,259 | 19,143 | 19,631 | 20,048 | 20,640 | 20,951 | 21,216 |
| Inventories, Net | 958 | 852 | 1,516 | 1,386 | 1,634 | 1,682 | 1,601 | 1,653 | 1,689 | 1,719 | 1,764 | 1,786 | 1,804 |
| Software Development and Intellectual Property Licenses | 279 | 192 | 159 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 |
| Deferred Income Taxes, Net | 2,711 | 2,832 | 2,974 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 | 2,857 |
| Other | 4,038 | 3,249 | 3,716 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 |
| Total Current Assets | 54,609 | 61,108 | 80,298 | 93,126 | 114,148 | 133,572 | 154,219 | 177,941 | 204,341 | 231,207 | 259,158 | 287,093 | 315,906 |
| Property and Equipment: | | | | | | | | | | | | | |
| Opening balance | 6,391 | 7,673 | 7,799 | 8,325 | 8,829 | 9,400 | 9,916 | 10,385 | 10,879 | 11,325 | 11,724 | 12,116 | 12,457 |
| Additions | 3,184 | 2,076 | 2,424 | 2,670 | 2,876 | 2,973 | 3,065 | 3,217 | 3,302 | 3,376 | 3,478 | 3,534 | 3,262 |
| Revaluations/Disposals | (126) | (82) | 177 | - | - | - | - | - | - | - | - | - | - |
| Depreciation | (1,776) | (1,868) | (2,075) | (2,167) | (2,304) | (2,457) | (2,596) | (2,723) | (2,856) | (2,977) | (3,086) | (3,193) | (3,287) |
| Closing balance | 7,673 | 7,799 | 8,325 | 8,829 | 9,400 | 9,916 | 10,385 | 10,879 | 11,325 | 11,724 | 12,116 | 12,457 | 12,432 |
| Equity and Other Investments | 4,956 | 7,777 | 10,881 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 | 9,089 |
| Software Development | 10 | 55 | 62 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| Intellectual Property Licenses | 28 | 28 | 12 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| Trademark and Trade Names | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 | 433 |
| Goodwill | 19,657 | 19,526 | 19,692 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 | 26,809 |
| Intangible Assets: | | | | | | | | | | | | | |
| Opening balance | 3,256 | 2,377 | 1,318 | 832 | 978 | 1,115 | 1,225 | 1,315 | 1,399 | 1,471 | 1,532 | 1,589 | 1,637 |
| Additions | 354 | 343 | 243 | 387 | 421 | 435 | 448 | 470 | 482 | 493 | 507 | 515 | 482 |
| Disposals | (338) | (824) | (266) | - | - | - | - | - | - | - | - | - | - |
| Amortization | (895) | (578) | (463) | (241) | (285) | (326) | (358) | (385) | (411) | (432) | (450) | (467) | (482) |
| Closing balance | 2,377 | 1,318 | 832 | 978 | 1,115 | 1,225 | 1,315 | 1,399 | 1,471 | 1,532 | 1,589 | 1,637 | 1,637 |
| Deferred Income Taxes | 279 | - | - | - | - | - | - | - | - | - | - | - | - |
| Other Long-Term Assets | 1,608 | 1,516 | 1,446 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 | 1,415 |
| Total Assets | 91,630 | 99,560 | 121,981 | 140,744 | 162,474 | 182,524 | 203,729 | 228,031 | 254,948 | 282,273 | 310,674 | 338,998 | 367,786 |
| | | | | | | | | | | | | | |
| **Liabilities and Shareholders' Equity** | | | | | | | | | | | | | |
| Current Liabilities: | | | | | | | | | | | | | |
| Accounts Payable | 3,626 | 4,388 | 4,587 | 4,900 | 5,960 | 6,015 | 5,733 | 5,935 | 6,076 | 6,198 | 6,375 | 6,466 | 6,541 |
| Short-Term Debt | 2,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - |
| Accrued Compensation and Expenses | 3,935 | 4,154 | 4,269 | 4,421 | 4,711 | 4,782 | 4,840 | 4,974 | 5,008 | 5,023 | 5,076 | 5,066 | 5,045 |
| Income Taxes | 725 | 1,074 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| Short-Term Unearned Revenue | 14,429 | 15,378 | 17,194 | 17,362 | 18,953 | 19,654 | 20,324 | 21,333 | 21,891 | 22,373 | 23,045 | 23,418 | 23,737 |
| Securities Lending Payable | 1,684 | 182 | 1,208 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 | 1,210 |
| Other | 3,142 | 2,931 | 3,492 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 | 3,011 |
| Total Current Liablities | 29,541 | 29,107 | 31,330 | 31,484 | 34,425 | 35,251 | 35,698 | 37,043 | 37,776 | 38,395 | 39,297 | 39,751 | 40,125 |
| | | | | | | | | | | | | | |
| Long Term Debt | 3,746 | 4,939 | 11,921 | 12,368 | 12,201 | 11,699 | 11,050 | 11,251 | 12,958 | 14,702 | 16,497 | 18,320 | 20,165 |
| Long-Term Unearned Revenue | 1,281 | 1,178 | 1,398 | 1,493 | 1,631 | 1,687 | 1,740 | 1,828 | 1,878 | 1,920 | 1,980 | 2,012 | 2,039 |
| Deferred Income Taxes | 270 | 349 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 | 1,511 |
| Other Long-Term Liabilites | 6,478 | 7,609 | 8,246 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 | 8,699 |
| Total Liabilities | 41,316 | 43,182 | 54,406 | 55,555 | 58,467 | 58,847 | 58,698 | 60,332 | 62,822 | 65,227 | 67,984 | 70,292 | 72,538 |
| | | | | | | | | | | | | | |
| Stockholders' Equity: | | | | | | | | | | | | | |
| Common Stock and Paid-In Capital | 74,758 | 75,209 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 | 73,031 |
| Less: Treasury Stock, at cost | (1,235) | (2,194) | - | - | - | - | - | - | - | - | - | - | - |
| Retained Deficit/Earnings, incl. Comprehensive Income: | (23,209) | (16,637) | (5,456) | 12,158 | 30,976 | 50,646 | 72,001 | 94,667 | 119,095 | 144,015 | 169,659 | 195,675 | 222,217 |
| Total Shareholders' Equity | 50,314 | 56,378 | 67,575 | 85,189 | 104,007 | 123,677 | 145,032 | 167,698 | 192,126 | 217,046 | 242,690 | 268,706 | 295,248 |
| Total Liabilities and Shareholders' Equity | 91,630 | 99,560 | 121,981 | 140,744 | 162,474 | 182,524 | 203,729 | 228,031 | 254,948 | 282,273 | 310,674 | 338,998 | 367,786 |

## Integrated Debt Position - MSFT-ATVI with Synergies

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Short-term debt | 2,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - |
| Long-term debt | 3,746 | 4,939 | 11,921 | 12,368 | 12,201 | 11,699 | 11,050 | 11,251 | 12,958 | 14,702 | 16,497 | 18,320 | 20,165 |
| Operating leases | 2,802 | 2,372 | 2,340 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 | 2,466 |
| Total debt | 8,548 | 8,311 | 14,261 | 14,834 | 14,667 | 14,165 | 13,516 | 13,717 | 15,424 | 17,168 | 18,964 | 20,786 | 22,631 |
| Cash and cash equivalents | 8,844 | 8,317 | 12,775 | 16,411 | 35,783 | 54,594 | 74,787 | 97,573 | 123,450 | 149,868 | 177,182 | 204,785 | 233,315 |
| **Net debt** | **(296)** | **(6)** | **1,486** | **(1,577)** | **(21,116)** | **(40,429)** | **(61,271)** | **(83,856)** | **(108,026)** | **(132,700)** | **(158,218)** | **(183,998)** | **(210,684)** |
| Interest expense/Debt | 0.49% | 1.88% | 2.10% | 2.57% | 2.70% | 2.75% | 2.77% | 2.58% | 2.33% | 2.41% | 2.47% | 2.53% | 2.58% |

### Integrated Operating Working Capital - MSFT-ATVI with Synergies

| | Past Position | | | Forecasted Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Accounts Receivables | 11,931 | 13,687 | 15,636 | 15,756 | 17,159 | 17,724 | 18,259 | 19,143 | 19,631 | 20,048 | 20,640 | 20,951 | 21,216 |
| Inventories | 958 | 852 | 1,516 | 1,386 | 1,634 | 1,682 | 1,601 | 1,653 | 1,689 | 1,719 | 1,764 | 1,786 | 1,804 |
| Software Development and Intellectual Property Licenses | 279 | 192 | 159 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 |
| Other Current Assets | 4,038 | 3,249 | 3,716 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 | 3,004 |
| Accounts Payable | 3,626 | 4,388 | 4,587 | 4,900 | 5,960 | 6,015 | 5,733 | 5,935 | 6,076 | 6,198 | 6,375 | 6,466 | 6,541 |
| Accrued Compensation and Expenses | 3,935 | 4,154 | 4,269 | 4,421 | 4,711 | 4,782 | 4,840 | 4,974 | 5,008 | 5,023 | 5,076 | 5,066 | 5,045 |
| Short-Term Unearned Revenue | 14,429 | 15,378 | 17,194 | 17,362 | 18,953 | 19,654 | 20,324 | 21,333 | 21,891 | 22,373 | 23,045 | 23,418 | 23,737 |
| Working Capital | (4,784) | (5,940) | (5,023) | (6,326) | (7,617) | (7,830) | (7,823) | (8,232) | (8,442) | (8,613) | (8,878) | (8,999) | (9,090) |
| | | | | | | | | | | | | | |
| Change in Net Working Capital | (1,619) | (1,156) | 917 | (1,303) | (1,291) | (213) | 7 | (409) | (210) | (171) | (265) | (121) | (91) |

### Integrated Free Cash Flow - MSFT-ATVI with Synergies

| *Direct Method* | Past Performance | | | Forecasted Performance | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E |
| Total Revenues | 62,716 | 66,931 | 74,698 | 78,603 | 86,087 | 88,919 | 91,717 | 96,230 | 98,781 | 100,981 | 104,046 | 105,727 | 107,170 |
| - Total Operating Expenses | 42,379 | 42,364 | 46,209 | 49,367 | 55,320 | 56,745 | 56,758 | 59,142 | 58,743 | 60,085 | 61,921 | 62,945 | 63,847 |
| + Amortization | 1,209 | 897 | 721 | 474 | 560 | 601 | 633 | 660 | 686 | 707 | 725 | 742 | 757 |
| = Earnings Before Interest, Taxes, and Amortization (EBITA | 21,546 | 25,464 | 29,210 | 29,710 | 31,326 | 32,774 | 35,592 | 37,748 | 40,724 | 41,603 | 42,850 | 43,524 | 44,080 |
| | | | | | | | | | | | | | |
| - Provision for Income Taxes | 5,131 | 6,327 | 5,167 | 5,783 | 6,102 | 6,383 | 6,933 | 7,360 | 7,938 | 8,098 | 8,333 | 8,454 | 8,321 |
| = Operating Profit (NOPLAT) | 16,415 | 19,137 | 24,043 | 23,927 | 25,224 | 26,391 | 28,659 | 30,388 | 32,786 | 33,504 | 34,516 | 35,070 | 35,758 |
| | | | | | | | | | | | | | |
| + Depreciation | 1,776 | 1,868 | 2,075 | 2,167 | 2,304 | 2,457 | 2,596 | 2,723 | 2,856 | 2,977 | 3,086 | 3,193 | 3,287 |
| - Increase in Operating Working Capital | 1,619 | 1,156 | (917) | 1,303 | 1,291 | 213 | (7) | 409 | 210 | 171 | 265 | 121 | 91 |
| - Investments in Property, Plant, and Equpment | (3,184) | (2,076) | (2,424) | (2,670) | (2,876) | (2,973) | (3,065) | (3,217) | (3,302) | (3,376) | (3,478) | (3,534) | (3,262) |
| - Investments in Goodwill and Acquired Intangibles | (1,104) | (620) | (646) | (7,779) | (696) | (710) | (723) | (745) | (757) | (768) | (782) | (790) | (757) |
| = Free Cash Flow | 15,522 | 19,465 | 22,131 | 16,947 | 25,247 | 25,378 | 27,460 | 29,557 | 31,793 | 32,509 | 33,606 | 34,060 | 35,118 |
| | | | | | | | | | | | | | |
| Terminal Value | | | | | | | | | | | | | 475,678 |
| | | | | | | | | | | | | | |
| Discounted FCFs of Forecast Period | | | | 15,488 | 21,086 | 19,370 | 19,154 | 18,842 | 18,522 | 17,308 | 16,351 | 15,145 | 14,271 |
| Discounted FCFs of Terminal Value | | | | | | | | | | | | | 193,299 |

### Valuation of Merged Company with Synergy

| | |
|---|---|
| Present Value of Forcast Period (2012-2021) | 175,537 |
| Present Value of Terminal Value | 193,299 |
| Enterprise Value | 368,835 |
| | |
| Net Debt | 1,486 |
| Equity Value | 367,349 |

### Valuation Parameters For MSFT-ATVI

| | |
|---|---|
| Risk-Free Interest Rate (US Treasury 10y) | 3.42% |
| Risk-Premium US | 5.20% |
| U.S. Marginal Tax Rate | 19.39% |
| | |
| Target D/E | 7.03% |
| Target D/(D+E) | 6.57% |
| Cost of Debt | 3.16% |
| | |
| Unlevered Beta | 1.19 |
| Unlevered Rate of Return, Equity | 9.60% |
| Merged Company Levered Beta | 1.26 |
| Levered Rate of Return, Equity | 9.96% |
| | |
| WACC | 9.42% |
| Long-Term Sustainable Growth Rate | 1.90% |

© Robert Stenmark

## Appendix 19: Meet the Premium Line Formula Derived

The following derivation of the meet the premium line is based on Sirower and Sahni's article Avoiding the "Synergy Trap": Practical Guidance on M&A Decisions for CEOs and Boards (2006). The Meet the Premium line formula presented in the article is based on the foundations of the market value in relation to the earnings and earning multiple of a company, which can be expressed as follows:

$$MV_T = E_T \cdot \frac{P}{E_T} \tag{1}$$

When an acquiring company pays a premium for a company, this can be expressed in terms of the pre-announcement target equity market value. This can be mathematically represented as:

$$\%P \cdot MV_T = \%P \cdot (E_T \cdot \frac{P}{E_T}) = (\%P \cdot E_T) \cdot \frac{P}{E_T} \tag{2}$$

If it is now assumed that the price-earnings multiple is held constant, the formula can be rewritten using revenues, pretax profit margin and the effective tax rate of the company.

$$\%P \cdot E_T = \%P \cdot (R \cdot \Pi) \cdot (1 - T) \tag{3}$$

The needed cost synergies for an acquisition can now be formulated as follows:

$$\%SynC = \frac{Pre\text{–}Tax\ Synergies\ Required}{Operating\ Cost\ Base} \ (4) \ or \ \%SynC = \frac{\%P \cdot (R \cdot \Pi)}{R \cdot (1 - \Pi)} = \%P \cdot \frac{\Pi}{1 - \Pi} \tag{5}$$

Both formulas present the same information; the only difference is that the latter uses the same variables in formula (3).

In acquisitions that enable both cost synergies and revenue synergies, the formula can be rewritten to also reflect the revenue synergies. The relationship can then be expressed as follows:

$$\%SynC = \frac{\%P \cdot (R \cdot \Pi) - (R \cdot \%SynR \cdot \Pi)}{R \cdot (1 - \Pi)} \ (6) \ or \ \%SynC = \frac{\Pi}{1 - \Pi} \cdot (\%P - \%SynR) \tag{7}$$

The last formula (7) is the one that is applied to find the cost and revenue synergies that are required to satisfy the acquisition premium for Activision Blizzard.

© Robert Stenmark

# 11. Bibliography

Activision Blizzard Inc. (2012a, April 2). *Historical Timeline*. Retrieved April 2, 2012, from Investor Relations Activision Blizzard: http://investor.activision.com/timeline.cfm

Activision Blizzard Inc. (2012b, February 9). *Activision Blizzard Announces Record Fourth Quarter and Calendar Year 2011 Earnings*. Retrieved April 4, 2012, from Investor Relations Activision Blizzard: http://investor.activision.com/releasedetail.cfm?ReleaseID=647732

Activision Blizzard Inc. (2011a). *Activision Blizzard, Inc. - Form 10-K (Annual Report)*. Santa Monica: Activision Blizzard, Inc.

Activision Blizzard Inc. (2011b, November 11). *ATVI Summary Sheet.* Retrieved April 3, 2012, from Investor Relations Activision Blizzard: http://investor.activision.com/common/download/download.cfm?companyid=ACTI&fileid=519310&filekey=2808f589-1d2c-4461-bee8-d56de82f7337&filename=ATVI_CQ311_Summary_Sheet.pdf

Activision Blizzard Inc. (2011c, February 11). *Activision to Unveil Skylanders Spyro's Adventure - A Breakthrough New Play Experience That Merges the World of Toys and Video Games - At the 2011 American International Toy Fair* . Retrieved April 4, 2012, from Investor Relations Activision Blizzard: http://investor.activision.com/common/download/download.cfm?companyid=ACTI&fileid=440705&filekey=d8a98c1e-0452-4287-87f3-3826ed1c3adb&filename=549493.pdf

Activision Blizzard Inc. (2010). *Activision Blizzard 2010 Annual Report.* Santa Monica: Activision Blizzard Inc.

Activision Blizzard Inc. (2008). *Activision Blizzard 2008 Annual Report.* Santa Monica: Activision Blizzard Inc.

Activision Blizzard Inc. (2007, December 2). *Vivendi and Activision to Create Activision Blizzard*. Retrieved April 2, 2012, from Investor Relations Activision Blizzard: http://investor.activision.com/releasedetail.cfm?ReleaseID=279372

Adolph, M. (2011). *Trends in Video Games and Gaming (ITU-T Technology Watch Report)*. Geneva: International Telecommunications Union.

Agrawal, A., Jaffe, J. F., & Mandelker, G. N. (1992). The Post-Merger Performance of Acquiring Firms: A Re-Examination of an Anomaly. *Journal of Finance , 47* (5), 1605-1621.

Alford, A. (1992). The Effect of the Set of Comparable Firms on the Accuracy of the Price-Earnings Valuation Method. *Journal of Accounting Research , 30* (1), 94-108.

Andrade, G. (1999). *Do Appearances Matter? The Impact of EPS Accretion and Dilution on Stock Prices (Working Paper)*. Boston: Harvard Business School.
Asquith, P., & Kim, E. H. (1982). The Impact of Merger Bids on the Participating Firms' Security Holders. *Journal of Finance , 37* (5), 1209-1228.

Banz, R. (1981). The Relationship Between Return and Market Value of Common Stocks. *Journal of Financial Economics , 9* (1), 3-18.

Barkema, H., & Schijven, M. (2008). How Do Firms Learn to Make Acquisitions? A Review of Past Research and an Agenda for the Future. *Journal of Management , 34* (3), 594-634.

Bhojraj, S., Lee, C. M., & Oler, D. K. (2003). *What's My Line? A Comparison of Industry Classification Schemes for Capital Market Research (Working Paper)*. New York: Cornell University.

Bilton, N. (2011, June 12). *Absences Speak Loudly at Video Game Expo*. Retrieved April 5, 2012, from The New York Times : http://www.nytimes.com/2011/06/13/business/media/13gaming.html

Blizzard Entertainment. (2012, April 1). *Company Profile*. Retrieved April 2, 2012, from Blizzard Entertainment: http://us.blizzard.com/en-us/company/about/profile.html

Blizzard Entertainment. (2011, January 1). *20th Anniversary*. Retrieved April 1, 2012, from Blizzard Entertainment: http://us.blizzard.com/en-us/company/about/b20/

Bloomberg. (2012, March 20). *Microsoft Said to Finish Windows 8 in Summer, Debut October*. Retrieved May 8, 2012, from Bloomberg: http://www.bloomberg.com/news/2012-03-19/microsoft-said-to-finish-windows-8-in-summer-with-october-debut.html

Bloomberg. (2011a, April 15). *Nintendo Forecasts Profit Short of Estimates, Will Offer Next Wii in 2012*. Retrieved April 17, 2012, from Bloomberg: http://www.bloomberg.com/news/2011-04-25/nintendo-forecasts-net-to-climb-42-will-introduce-wii-successor-in-2012.html

Bloomberg. (2011b, August 8). *S&P Says U.S. Downgrade Doesn't Affect AAA Rated J&J, Microsoft*. Retrieved May 13, 2012, from Bloomberg: http://www.bloomberg.com/news/2011-08-08/s-p-says-u-s-downgrade-doesn-t-affect-aaa-rated-j-j-microsoft.html

Bradley, M., Desai, A., & Kim, E. H. (1988). Synergistic Gains from Corporate Acquisitions and Their Division Between the Stockholders of Target and Acquiring Firms. *Journal of Financial Economics , 21* (1), 3-40.

Bruner, R. (2004). Where M&A Pays and Where It Strays: A Survey of the Research. *Journal of Applied Corporate Finance , 16* (4), 63-76.

Buffett, W. E. (1997). *Berkshire Hathaway Annual Report 1997.* Omaha: Berkshire Hathaway Inc.

Campa, J. M., & Goldberg, L. S. (2006). *Distribution Margins, Imported Inputs and the Sensitivity of CPI to Exchange Rates (Working Paper 12121).* Cambridge: National Bureau of Economic Research.

Chan, L., Karceski, J., & Lakonishok, J. (2003). The Level of Persistence of Growth Rates. *Journal of Finance , 58* (2), 643-684.

Coffey, J. F. (2009). The Capex Adjustment. *Value Examiner* , 10-13.

Copeland, T., & Antikarov, V. (2003). *Real Options, Revised Edition: A Practitioner's Guide.* New York: Texere.

Credit Suisse. (2012). *Credit Suisse Global Investment Returns Yearbook 2012.* Zürich: Credit Suisse AG.

Damodaran, A. (2012a, January 1). *Betas by Sector*. Retrieved May 13, 2012, from Damodaran Online: http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/Betas.html

Damodaran, A. (2012b, January 1). *Rating and Cost of Debt.* Retrieved May 8, 2012, from Damodaran Online: http://www.stern.nyu.edu/~adamodar/pc/ratings.xls

Damodaran, A. (2011). *Equity Risk Premiums (ERP): Determinants, Estimation and Implications - The 2011 Edition.* New York: Stern School of Business.

Damodaran, A. (2010). *Applied Corporate Finance, 3rd Edition.* New York: John Wiley & Sons.

Damodaran, A. (2009). *Leases, Debt and Value.* New York: Stern School of Business.

Damodaran, A. (2008a). *Growth and Value: Past Growth, Predicted Growth and Fundamental Growth.* New York: Stern School of Business.

Damodaran, A. (2008b). *What is the Riskfree Rate? A Search for the Basic Building Block.* New York: Stern School of Business.

Damodaran, A. (2007). *Return on Capital (ROC), Return on Invested Capital (ROIC) and Return on Equity (ROE): Measurement and Implications.* New York: Stern School of Business.

Damodaran, A. (2006). *Cost of Distress: Survival, Truncation Risk and Valuation.* New York: Stern School of Business.

Damodaran, A. (2005a). Valuation Approaches and Metrics: A Survey of the Theory and Evidence. *Foundations and Trends in Finance* , 693-784.

Damodaran, A. (2005b). *The Value of Synergy.* New York: Stern School of Business.

Damodaran, A. (2005c). *The Value of Control: Implications for Control Premia, Minority Discounts and Voting Share Differentials.* New York: Stern School of Business.

Damodaran, A. (2002). *Investment Valuation, 2nd Edition.* New York: John Wiley & Sons.

Deloitte. (2009). *SEC Reporting for Business Combinations and Related Topics.* New York: Deloitte Development LLC.

Edgecliffe-Johnson, A. (2010, June 15). *Video Games to Tripple Music Market by 2014*. Retrieved April 10, 2012, from Financial Times: http://www.ft.com/intl/cms/s/2/58f3f180-77ed-11df-82c3-00144feabdc0.html#axzz1r67ii2ee

Electronic Arts Inc. (2011a). *Electronic Arts Inc. Fiscal Year 2011 - Proxy Statement and Annual Report.* Redwood City: Electronic Arts, Inc.

Electronic Arts Inc. (2011b, July 26). *Electronic Arts Reports Q1 FY12 Financial Results*. Retrieved April 14, 2012, from Electronic Arts Investor Relations: http://investor.ea.com/releasedetail.cfm?ReleaseID=594196

eMarketer. (2012, January 19). *US Online Ad Spend to Close in on $40 Billion*. Retrieved May 9, 2012, from eMarketer: http://www.emarketer.com/Article.aspx?R=1008783

Entertainment Software Association. (2011, May 1). *Game Player Data.* Retrieved April 3, 2012, from The Entertainment Software Association: http://www.theesa.com/facts/pdfs/ESA_EF_2011.pdf

Eurogamer. (2006, December 6). *Early Wii figures from Japan*. Retrieved April 4, 2012, from Eurogamer: http://www.eurogamer.net/articles/news061206earlywii

Fama, E. F., & French, K. R. (1997). Industry Cost of Equity. *Journal of Financial Economics , 43*, 153-193.

Fama, E. F., & French, K. R. (1996). The CAPM is Wanted, Dead or Alive. *The Journal of Finance , 51* (5), 1947-1958.

Fama, E. F., & French, K. R. (1992). The Cross-Section of Expected Stock Returns. *The Journal of Finance , 47* (2), 427-465.

FASB. (2012, January 1). *Accounting Standards Codification*. Retrieved May 18, 2012, from Financial Accounting Standards Board (FASB): https://asc.fasb.org/home

Fildes, J. (2010, May 12). *Microsoft Office 2010 takes aim at Google Docs*. Retrieved April 2, 2012, from BBC News: www.bbc.co.uk/news/10107799

Fortune. (2011, May 23). *Fortune 500 - 2011*. Retrieved April 1, 2012, from CNN Money: www.money.cnn.com/magazines/fortune/fortune500/2011/full_list/

GamesIndustry International. (2006a, December 13). *European Consumers Snap Up 325,000 Wii Consoles in Two Days*. Retrieved April 4, 2012, from GamesIndustry International: http://www.gamesindustry.biz/articles/european-consumers-snap-up-325000-wii-consoles-in-two-days

GamesIndustry International. (2006b, December 14). *Nintendo Wii Breaks Records in Australia*. Retrieved April 4, 2012, from GamesIndustry International: http://www.gamesindustry.biz/articles/nintendo-wii-breaks-records-in-australia

Gartner, Inc. (2011, July 5). *Gartner Says Spending on Gaming to Exceed $74 Billion in 2011*. Retrieved April 5, 2012, from Gartner Newsroom: http://www.gartner.com/it/page.jsp?id=1737414

Goedhart, M., Koller, T., & Wessel, D. (2005). The Right Role for Multiples in Valuation. *McKinsey Quarterly* , 7-11.

Guinness World Records. (2011, January 3). *Kinect Confirmed As Fastest-SeLling Consumer ElectronicS Device*. Retrieved April 3, 2012, from Guinness World Records: http://community.guinnessworldrecords.com/_Kinect-Confirmed-As-Fastest-Selling-Consumer-Electronics-Device/blog/3376939/7691.html

Harris, R. S., & Pringle, J. J. (1985). Risk-Adjusted Discount Rates - Extensions From the Average-Risk Case. *The Journal of Financial Research , 8* (3), 237-244.

Heron, R., & Lie, E. (2002). Operating Performance and the Method of Payment in Takeovers. *Journal of Financial & Quantitative Analysis , 37* (1), 137-155.

IDC. (2011, August 23). *IDC - Press Release* . Retrieved April 2, 2012, from IDC Web Site: www.idc.com/getdoc.jsp?containerId=prUS22998411

IFRS Foundation. (2012, January 1). *Standards (IFRSs)*. Retrieved April 5, 2012, from IFRS Foundation: http://www.ifrs.org/IFRSs/IAS.htm

IGN. (2006, November 28). *Wii Sells Through 600k*. Retrieved April 4, 2012, from IGN Web Site: http://uk.wii.ign.com/articles/747/747728p1.html

IMDb. (2012, January 1). *Most Popular Video Games Released In 2011*. Retrieved April 14, 2012, from The Internet Movie Database (IMDb): http://www.imdb.com/search/title?sort=moviemeter,asc&title_type=game&year=2011,2011

IMF. (2012). *World Economic Outlook - April 2012.* Washington: International Monetary Fund.

IRS. (2012, January 23). *Instructions for Form 1120.* Retrieved May 13, 2012, from Internal Revenue Service: http://www.irs.gov/pub/irs-pdf/i1120.pdf

ITU. (2011, November 16). *Key Global Telecom Indicators for the World Telecommunications Service Sector*. Retrieved April 17, 2012, from ICT - International Telecommunication Union Web Site: http://www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom.html

Jarrell, G. A., & Poulsen, A. B. (1989). The Returns to Acquiring Firms in Tender Offers: Evidence from Three Decades. *Financial Management , 18* (3), 12-19.

Kaplan, P. D., & Peterson, J. D. (1998). Full-Information Industry Betas. *Financial Management , 27* (2), 85-93.

Kaplan, S. N., & Ruback, R. S. (1996). The Market Pricing of Cash Flow Forecasts: Discounted Cash Flows vs. the Method of "Comparables". *Journal of Applied Corporate Finance , 8* (4), 45-60.

Karimzad, B., & Grant, M. (2012). *Activision Blizzard, Inc. (ATVI)*. New York: Goldman Sachs Global Investment Research.

Karimzad, B., Grant, M., & Fassler, M. J. (2012). *Americas: Technology: Software - Games.* New York: Goldman Sachs Global Investment Research.

Kester, W., & Froot, K. (1997). *Note on Cross-Border Valuation.* Boston: Harvard Business School.

Kim, M., & Ritter, J. R. (1999). Valuing IPOs. *Journal of Fiancial Economics , 53* (3), 409-437.

Koller, T., Goedhart, M., & Wessels, D. (2010). *Valuation - Measuring and Managing the Value of Companies.* New Jersey: John Wiley & Sons.

Lie, E., & Lie, H. (2002). Mutliples Used to Estimate Corporate Value. *Financial Analysis Journal* , 44-54.

Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *Review of Economics and Statistics* , 13-37.

Liu, J., Nissim, D., & Jacob, T. K. (2002). Equity Valuation Using Multiples. *Journal of Accounting Research , 40* (1), 135-172.

Los Angeles Times. (2012, March 26). *Xbox Now Used More for Online Entertainment Than Online Gaming*. Retrieved April 5, 2012, from Los Angeles Times: http://latimesblogs.latimes.com/entertainmentnewsbuzz/2012/03/xbox-more-entertainment-gaming-hbo-go-comcast-xfinity-mlb.html

Loughran, T., & Vijh, A. M. (1997). Do Long-Term Shareholders Benefit From Corporate Acquisitions? *Journal of Finance , 52* (5), 1765-1790.

Luehrman, T. (1997a). Using APV: A Better Tool for Valuing Operations. *Harvard Business Revies* , 145-154.

Luehrman, T. (1997b, May-June). What is it Worth? A General Manager's Guide to Valuation. *Harvard Business Review* , 132-142.

MarketLine. (2012a). *MarketLine Industry Profile - Game Consoles in the United States.* London: MarketLine.

MarketLine. (2012b). *MarketLine Industry Profile - Games Consoles in Europe.* London: MarketLine.

MarketLine. (2012c). *MarketLine Industry Profile - Global Games Consoles.* London: MarketLine.

MarketLine. (2012d). *MarketLine Industry Profile - Global Computer Hardware.* London: MarketLine.

MarketLine. (2012e). *MarketLine Industry Profile - Computer Hardware in the United States.* London: MarketLine.

MarketLine. (2012f). *MarketLine Industry Profile - Computer Hardware in Europe.* London: MarketLine.

Microsoft Corporation. (2012a, January 1). *Company Overview*. Retrieved April 1, 2012, from Microsoft Investor Relations: www.microsoft.com/investor/CompanyInfo/Overview/default.aspx

Microsoft Corporation. (2012b). *Acquisition History*. Retrieved April 1, 2012, from Microsoft Investor Relations: www.microsoft.com/investor/Stock/AcquisitonHistory/All/default.aspx

Microsoft Corporation. (2012c, January 1). *Kinect*. Retrieved April 3, 2012, from Xbox Web Site: http://www.xbox.com/en-US/Kinect

Microsoft Corporation. (2012d, Januar 19). *Earnings Release FY12 Q2*. Retrieved April 3, 2012, from Microsoft Investor Relations: http://www.microsoft.com/investor/EarningsAndFinancials/Earnings/SegmentResults/EntertainmentAndDevicesDivision/FY12/Q2/Kpi.aspx

Microsoft Corporation. (2012e, January 1). *Xbox LIVE*. Retrieved April 3, 2012, from Xbox Web Site: http://www.xbox.com/en-US/Live/

Microsoft Corporation. (2012f, March 28). *Nokia launches first CDMA Windows Phone in China*. Retrieved April 3, 2012, from Windows Phone Blog:

http://windowsteamblog.com/windows_phone/b/windowsphone/archive/2012/03/28/nokia-launches-first-cdma-windows-phone-in-china.aspx

Microsoft Corporation. (2012g, April 2). *Earnings Release FY12 Q2 - Key Performance Indicators*. Retrieved April 5, 2012, from Microsoft Investor Relations: http://www.microsoft.com/investor/EarningsAndFinancials/Earnings/Kpi/FY12/Q2/Detail.aspx

Microsoft Corporation. (2012h). *Microsoft Corporation - Form 10-Q, Quarterly Period Ended March 31, 2012.* Redmond: Microsoft Corporation.

Microsoft Corporation. (2011a). *Microsoft Corporation 2011 Annual Report.* Redmond: Microsoft Corporation.

Microsoft Corporation. (2011b, February 11). *Nokia and Microsoft Announce Plans for a Broad Strategic Partnership to Build a New Global Mobile Ecosystem*. Retrieved April 3, 2012, from Microsoft News Center: http://www.microsoft.com/presspass/press/2011/feb11/02-11partnership.mspx

Microsoft Corporation. (2011c, December 4). *The Future of TV Begins Now on Xbox 360*. Retrieved April 3, 2012, from Microsoft News Center: http://www.microsoft.com/presspass/press/2011/dec11/12-04Xbox360TV.mspx

Microsoft Corporation. (2010a). *Microsoft Corporation 2010 Annual Report.* Redmond: Microsoft Corporation.

Microsoft Corporation. (2010b, October 11). *Microsoft and Partners Unveil Windows Phone 7 Global Portfolio*. Retrieved from Microsoft News Center: http://www.microsoft.com/presspass/press/2010/oct10/10-11mswp7pr.mspx

Microsoft Corporation. (2009). *Microsoft Corporation 2009 Annual Report.* Redmond: Microsoft Corporation.

Microsoft Corporation. (2007). *Microsoft Corporation 2007 Annual Report.* Redmond: Microsoft Corporation.

Microsoft Corporation. (2005). *Microsoft Corporation 2005 Annual Report.* Redmond: Microsoft Corporation.

Microsoft Corporation. (2002). *Microsoft Corporation 2002 Annual Report.* Redmond: Microsoft Corporation.

Mintel Group Ltd. (2011). *The US Mobile Gaming Market.* London: Mintel Group Ltd.

Modigliani, F., & Miller, M. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *American Economic Review* , 261-297.

Morck, R., & Yeung, B. (1997). *Why Investors Sometimes Value Size and Diversification: The Internalization Theory of Synergy (Discussion Paper No. 411).* Edmonton: University of Alberta.

Morck, R., Shleifer, A., & Vishny, R. W. (1990). Do Managerial Objectives Drive Bad Acquisitions? *The Journal of Finance , 45* (1), 31-48.

Myers, S. (1974). Interactions of Corporate Financing and Investment Decisions - Implications for Capital Budgeting. *Journal of Finance , 29*, 1-25.

Net Market Share. (2012, April 1). *Operating System Market Shares*. Retrieved April 1, 2012, from Net Market Share Web Site: www.netmarketshare.com/operating-system-market-share.aspx

Nintendo Co., Ltd. (2012, January 1). *Consolidated Sales Transition by Region.* Retrieved April 5, 2012, from Nintendo Co., Ltd. - Investor Relations: http://www.nintendo.co.jp/ir/library/historical_data/pdf/consolidated_sales_e1112.pdf

Nintendo. (2011, August 6). *Nintendo's Upcoming Wii U Console Features Controller With 6.2-Inc Screen*. Retrieved April 17, 2012, from Nintendo News: http://www.nintendo.com/whatsnew/detail/5M4HrBRE69Bh4iKqimiF5RDqSiIUGd4B

Nuttall, C. (2011a, February 10). *Financial Times: Media*. Retrieved April 4, 2012, from Financial Times: http://www.ft.com/cms/s/0/3f5e73fa-34ab-11e0-9ebc-00144feabdc0.html#axzz1r67ii2ee

Nuttall, C. (2011b, June 7). *Sony Unveils Low-Price Vita Gaming Console*. Retrieved April 17, 2012, from Financial Times : http://www.ft.com/intl/cms/s/2/3af1811a-90ca-11e0-acfd-00144feab49a.html#axzz1sFCAQG7B

PwC. (2011, August 1). Global Entertainment and Media Outlook 2011-2015 - Events & Trends. *Global Entertainment and Media Outlook , 250* (1), pp. 1-71.

Reuters. (2012, January 26). *Nintendo Sees First Annual Loss, Cuts 3DS Forecast*. Retrieved April 5, 2012, from Reuters: http://www.reuters.com/article/2012/01/26/us-nintendo-results-idUSTRE80P0BQ20120126

Securities and Exchange Commission. (2012). *Division of Corporation Finance: Standard Industrial Classification (SIC) Code List*. Retrieved April 1, 2012, from Securities and Exchange Commission: www.sec.gov/info/edgar/siccodes.htm

Sharpe, W. F. (1964, September). Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk. *The Journal of Finance* , 425-442.

Shivdasani, A., & Zak, A. (2007). The Return of the Recap: Achieving Private Equity Benefits as a Public Company. *Journal of Applied Corporate Finance , 19* (3), 32-41.

Sirower, M. L., & Sahni, S. (2006). Avoiding the "Synergy Trap": Practical Guidance on M&A Decisions for CEOs and Boards. *Journal of Applied Corporate Finance , 18* (3), 83-95.

Sony Computer Entertainment, Inc. (2012, April 5). *Corporate Information*. Retrieved April 5, 2012, from Sony Computer Entertainment, Inc.: http://www.scei.co.jp/corporate/data/bizdataps3_sale_e.html

Standard & Poor's. (2012). *Global Industry Classification Standard*. Retrieved April 1, 2012, from Standard & Poor's: www.standardandpoors.com/indices/gics/en/us

Stat Owl. (2011). *Web Browser Market Share*. Retrieved April 1, 2012, from Stat Owl: www.statowl.com/web_browser_market_share.php

Take-Two Interactive Software, Inc. (2011). *Take-Two Interactive Software, Inc. - Annual Report 2011.* New York: Take-Two Interactive Software, Inc.

TechFlash. (2011, July 13). *Market Share of Bing, Google, Yahoo! Remains Flat*. Retrieved April 1, 2012, from TechFlash Web Site: www.techflash.com/seattle/2011/07/bings-market-share-continues-rapid.html

The New York Times. (2011, August 2). *AAA Is a Rarity in Business*. Retrieved May 30, 2012, from The New York Times: http://www.nytimes.com/2011/08/03/business/aaa-rating-is-a-rarity-in-business.html

The World Bank Group. (2012, April 17). *World Development Indicators*. Retrieved April 24, 2012, from The World Bank Group: http://data.worldbank.org/data-catalog/world-development-indicators

THQ. (2012, Januar 25). *THQ Outlines Business Strategy of Focusing Exclusively on High-Quality Core Games and Connected Experiences for Key Franchises*. Retrieved April 14, 2012, from THQ Investor Relations: http://investor.thq.com/phoenix.zhtml?c=96376&p=irol-newsArticle&ID=1652344&highlight=

THQ Inc. (2011). *THQ 2011 Annual Report* . Delaware: THQ Inc.

Trigeorgis, L. (1996). *Real Options: Managerial Flexibility and Strategy in Resource Allocation.* Cambridge: The MIT Press.

U.S. Department of the Treasury. (2012, May 7). *Daily Treasury Yield Curve Rates*. Retrieved May 8, 2012, from U.S. Department of the Treasury: http://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/TextView.aspx?data=yield

United States Census Bureau. (2012). *North American Industry Classification System*. Retrieved April 1, 2012, from United States Census Bureau: www.census.gov/eos/www/naics

USA Today. (2006, August 15). *Nintendo Hopes Wii Spells Winner.* Retrieved April 5, 2012, from USA Today: http://www.usatoday.com/tech/gaming/2006-08-14-nintendo-qa_x.htm

Young, M., Sullivan, P., Nokhasteh, A., & Holt, W. (1999). *All Roads Lead to Rome - An Integrated Approach to Valuation Methods.* London: Goldman Sachs Investment Research.

Yuan, D., Entwistle, G., & Stolowy, H. (2007). *Case: Identifying and Coping with Balance Sheet Differences: A Comparative Analysis of U.S., Chinese, and French Oil and Gas Firms Using the "Statement of Financial Structure".* Wellesley: ECCH - The Case For Learning.

Zenner, M., Matthews, M., Marks, J., & Mago, N. (2008). The Era of Cross-Border M&A: How Current Market Dynamics are Changing the M&A Landscape. *Journal of Applied Corporate Finance , 20* (2), 84-96.